

Exhibit Y

Exhibit A-19

Invalidity of U.S. Patent No. 6,757,068 (“’068 Patent”)¹ under Pre-AIA Section 102 or Section 103 in view of InterSense InterTrax (“InterTrax”)² and InterTrax 2 (“InterTrax and InterTrax 2”)³

InterTrax and InterTrax 2 were publicly available at least as of 1998. Plaintiffs assert a priority date of January 28, 2000 for the ’068 Patent. Even assuming that the ’068 Patent is entitled to this priority date, InterTrax and InterTrax 2 qualify as prior art under at least pre-AIA Sections 102(a) and (b) to the ’068 Patent.

As described herein, the asserted claims of the ’068 Patent are invalid (a) under one or more sections of 35 U.S.C. § 102 as anticipated expressly or inherently by InterTrax and InterTrax 2 (including the documents incorporated into InterTrax and InterTrax 2 by reference) and (b) under 35 U.S.C. § 103 as obvious in view of InterTrax and InterTrax 2 standing alone and, additionally, in combination with the knowledge of one of ordinary skill in the art, and/or other prior art, including but not limited to the prior art identified in Defendants’ Invalidity Contentions and the prior art described in the claim charts attached in Exhibits A-1 – A-29. With respect to the proposed modifications to InterTrax and InterTrax 2, as of the priority date of the ’068 Patent, such modification would have been obvious to try, an obvious combination of prior art elements according to known methods to yield predictable results, a simple substitution of one known element for another to obtain predictable results, a use of known techniques to improve a similar devices or method in the same way, an application of a known technique to a known device or method ready for improvement to yield predictable results, a variation of a known work in one field of endeavor for use in either the same field or a different one based on design incentives or other market forces with variations that are predictable to one of ordinary skill in the

¹ Discovery in this case is ongoing and, accordingly, this invalidity chart is not to be considered final. Defendants have conducted the invalidity analysis herein without having fully undergone claim construction and a *Markman* hearing. By charting the prior art against the claim(s) herein, Defendants are not admitting nor agreeing to Plaintiffs’ interpretation of the claims at issue in this case. Additionally, these charts provide representative examples of portions of the charted references that disclose the indicated limitations under Plaintiffs’ application of the claims; additional portions of these references other than the representative examples provided herein may also disclose the indicated limitation(s) and Defendants contend that the asserted claim(s) are invalid in light of the charted reference(s) as a whole. Defendants reserve the right to rely on additional citations or sources of evidence that also may be applicable, or that may become applicable in light of claim construction, changes in Plaintiffs’ infringement contentions, and/or information obtained during discovery as the case progresses. Further, by submitting these invalidity contentions, Defendants do not waive and hereby expressly reserve their right to raise other invalidity defenses, including but not limited to defenses under Sections 101 and 112. Defendants reserve the right to amend or supplement this claim chart at a later date, including after the Court’s order construing disputed claim terms.

² The claim limitations described herein were disclosed by InterSense InterTrax as of the earliest priority date of the ’068 patent. For example, InterSense introduced InterTrax in July 1998. *InterSense Introduces the InterTrax™ Motion Tracker and Expects to Expand the Use of Virtual Environments*, InterSense Press Release (July 20, 1998), <https://web.archive.org/web/20010220153622/http://www.isense.com/news/pr/1998/expand.htm> (“InterSense July 20, 1998 Press Release”); Sony and InterSense Join Forces to Supply Tracked Personal Display Systems to the Real-Time 3D Computing Market, InterSense Press Release (July 13, 1999), <https://web.archive.org/web/20010221161840/http://www.isense.com/news/pr/1999/sony.htm> (“InterSense July 13, 1999 Press Release”); images and packaging for InterSense InterTrax (“InterTrax Packaging”) (see Defendants’ corresponding production).

³ The claim limitations described herein were disclosed by InterSense InterTrax and InterTrax 2 as of the earliest priority date of the ’068 patent. For instance, provisional application no. 60/178,797 to which the ’068 Patent claims priority, mentions InterTrax and InterTrax 2 (“The core of this implementation is an inertial head orientation module called InterTrax and InterTrax 2 (available from InterSense and designed for use with consumer HMDs such as the Sony Classtron and Olympus EyeTrek).”). See also <https://web.archive.org/web/20030804224641/http://www.isense.com/products/pro/itrax2/itrax2.pdf> (“InterTrax 2 Brochure”).

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art, and/or obvious in view of teachings, suggestions, and motivations in the prior art that would have led one of ordinary skill to modify or combine the prior art references.

All cross-references should be understood to include material that is cross-referenced within the cross-reference. Where a particular figure is cited, the citation should be understood to encompass the caption and description of the figure as well as any text relating to or describing the figure. Conversely, where particular text referring to a figure is cited, the citation should be understood to include the figure as well.

A. INDEPENDENT CLAIM 1

CLAIM 1	InterTrax and InterTrax 2
[1.pre] A method comprising:	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, a method.</p> <p>No party has yet asserted that the preamble is limiting, nor has the Court yet construed the preamble as limiting. However, to the extent that the preamble is limiting, it is disclosed by InterTrax and InterTrax 2.</p> <p>In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See, e.g.:</i></p>

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CLAIM 1	InterTrax and InterTrax 2
	<div>  <p>INTERTRAX² <i>Bringing 3-D To Life</i></p> <p>Three men wearing InterTrax 2 head trackers, looking forward, with a large orange and yellow circular graphic behind them.</p> </div> <div> <ul style="list-style-type: none"> ■ Next generation of the world's best-selling tracker ■ Increased functionality and accuracy ■ Priced for consumers, performance for professionals ■ Available standalone or bundled with headsets ■ Simple connection to all personal display devices ■ Available with USB or Serial Interface ■ Compatible with Playstation2, PCs and workstations ■ USB middleware and SDK available <p><i>The Smallest High Performance</i></p>  <p><i>Head Tracker in the World</i></p> <p>INTERSENSE www.isense.com</p> </div> <div>  <p>A person wearing an InterTrax 2 head tracker and holding a controller, standing against a blue background.</p> </div> <p>InterTrax 2 Brochure.</p>

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CLAIM 1	InterTrax and InterTrax 2
	<p>InterSense Introduces the InterTrax™ Motion Tracker and Expects to Expand the Use of Virtual Environments</p> <p>The InterTrax motion tracker will bring virtual environments to the professional and high-end consumer marketplace beginning with a virtual fitness trainer</p> <p>Orlando, FL –July 20, 1998 – InterSense (Booth #1317), the leading developer and supplier of motion-tracking systems for human interaction with virtual environments and 3D graphics, today introduced the InterTrax™ 20 and 30 precision motion trackers. Using InterSense’s exclusive inertial tracking technology and algorithms, InterTrax relieves the jitter and complex set-up normally associated with virtual environments to create smooth, realistic 3D experiences that can easily be installed on any PC. A low price point and high performance make this tracker suitable for high-end consumers and professionals. Later this summer, InterTrax will be integrated with the Sony GlassTron™ and StairMaster FreeRunner™ to bring virtual environments to consumers in a virtual reality fitness trainer.</p> <p>InterSense July 20, 1998 Press Release.</p>

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CLAIM 1	InterTrax and InterTrax 2
	<p>Sony and InterSense Join Forces to Supply Tracked Personal Display Systems to the Real-Time 3D Computing Market</p> <p>Burlington, Mass. - July 13, 1999 - Sony Broadcast & Professional Europe has joined forces with InterSense Inc., the leading provider of precision motion tracking systems, to provide professional users of 3D graphics with the first affordable, high performance system for exploring and interacting with real-time computer generated environments.</p> <p>InterSense and its international distribution partners will supply the full range of Sony Glasstron LDI series personal display systems bundled with the InterTraxÔ inertial tracking system. The system provides an integrated solution that allows users to view and walk through standard 3D environments in real time. This bundled product offering is compatible with a wide range of 3D software toolkits and most 3D PC software. With prices ranging from \$1,750, it is also priced to appeal to a new generation of 3D software users who were previously unable to take advantage of the benefits of visual simulation.</p> <p>InterSense July 13, 1999 Press Release.</p>

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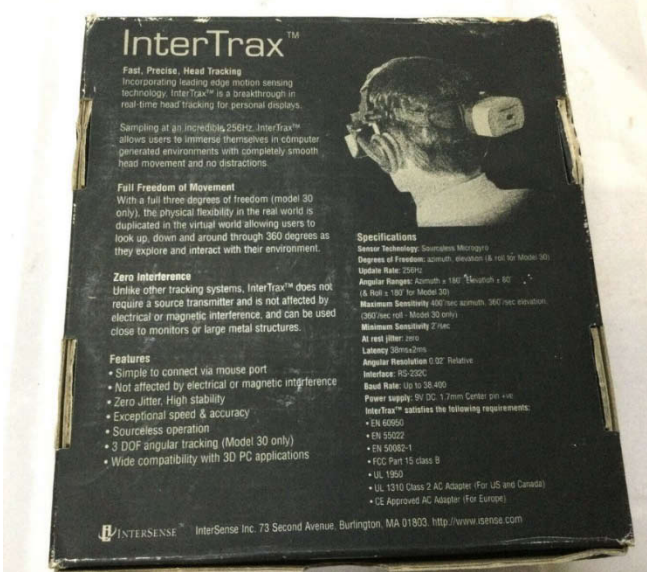
CLAIM 1	InterTrax and InterTrax 2
	 <p>InterTrax™</p> <p>Fast, Precise, Head Tracking Incorporating leading edge motion sensing technology, InterTrax™ is a breakthrough in real time head tracking for personal displays.</p> <p>Sampling at an incredible 250Hz, InterTrax™ allows users to immerse themselves in computer generated environments with completely smooth head movement and no distractions.</p> <p>Full Freedom of Movement With a full three degrees of freedom (model 30 only), the physical flexibility in the real world is duplicated in the virtual world allowing users to look up, down and around through 360 degrees as they explore and interact with their environment.</p> <p>Zero Interference Unlike other tracking systems, InterTrax™ does not require a source transmitter and is not affected by electrical or magnetic interference, and can be used close to monitors or large metal structures.</p> <p>Features</p> <ul style="list-style-type: none"> • Simple to connect via mouse port • Not affected by electrical or magnetic interference • Zero jitter, high stability • Exceptional speed & accuracy • Sourceless operation • 3 DOF angular tracking (Model 30 only) • Wide compatibility with 3D PC applications <p>Specifications</p> <p>Sensor Technology: Sonarless Magnetic</p> <p>Degrees of Freedom: azimuth, elevation (A, rot for Model 30)</p> <p>Update Rate: 250Hz</p> <p>Angular Ranges: Azimuth ± 180° Elevation ± 90° (A, Rot ± 180° for Model 30)</p> <p>Maximum Sensitivity: 400 Hz azimuth, 360 Hz elevation, 360 Hz rot - Model 30 only</p> <p>Minimum Sensitivity: 2 Hz</p> <p>At rest jitter: zero</p> <p>Latency: 20ms/20ms</p> <p>Angular Resolution: 0.02° Relative</p> <p>Interface: RS-232C</p> <p>Baud Rate: up to 28,800</p> <p>Power supply: 9V DC, 1.2mm Center pin +ve</p> <p>InterTrax™ satisfies the following requirements:</p> <ul style="list-style-type: none"> • EN 60950 • EN 55022 • EN 50082-1 • FCC Part 15 class B • UL 1950 • UL 1310 Class 2 AC Adapter (For US and Canada) • CE Approved AC Adapter (For Europe) <p>INTERSENSE™ InterSense Inc. 73 Second Avenue, Burlington, MA 01803. http://www.isense.com</p> <p>InterTrax Packaging.</p>

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CLAIM 1	InterTrax and InterTrax 2
	 <p>InterTrax Packaging.</p> <p><i>See also</i> Defendants' Invalidity Contentions for further discussion.</p>
[1.a] mounting a sourceless orientation tracker on a user's head, and	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, mounting a sourceless orientation tracker on a user's head. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See, e.g.:</i></p>

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CLAIM 1	InterTrax and InterTrax 2
	<div> </div> <div> </div> <p>InterTrax 2 Brochure.</p> <p> "InterSense has been recognized in the industry as the leading developer and manufacturer of motion-tracking technologies," said Charlie Miller, InterSense CEO. "With our flagship inertial and ultrasonic trackers, the IS-300 and IS-600, we were able to make virtual environments viable business solutions. Now, with our new line of motion trackers, the InterTrax 20 and 30, both at a lower price point, we can make the benefits of our sourceless inertial tracking technology available to an even broader professional and consumer market. With InterTrax, there is no disorienting slosh and jitter because it is based on InterSense's patented drift-corrected gyroscopic technology. With InterTrax, our goal at InterSense is to make virtual environments part of everyday life." </p> <p>InterSense July 20, 1998 Press Release.</p>

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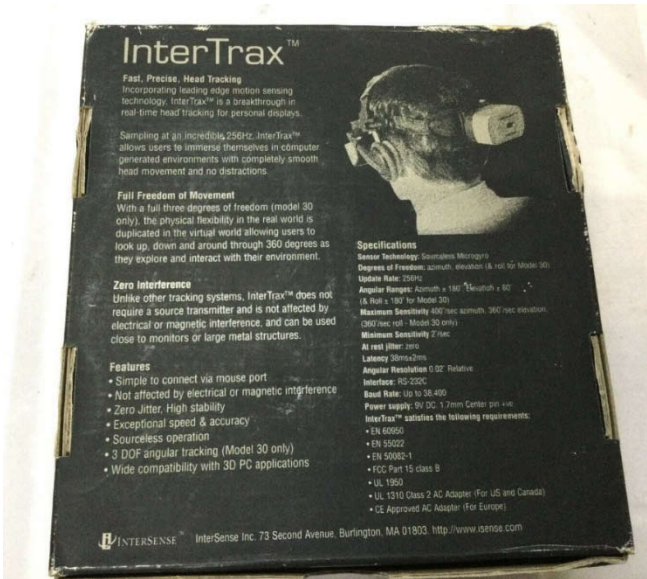
CLAIM 1	InterTrax and InterTrax 2
	<p>More than any other motion tracker on the market, InterTrax offers high performance and ease of use, there is no source to set up and no configuration software required. The unit comes with an ergonomic curved adapter plate which attaches with Velcro onto the back of any head-mounted display. InterTrax plugs directly into a PC serial port without a separate electronics processing box, and has a single button conveniently accessible on the back for resetting the orientation at the start of a session. The tracker can be used in mouse emulation mode for instant compatibility with many 3D applications, or, for improved performance, can be used in native mode via a simplified protocol allowing for rapid integration by software developers.</p> <p>InterSense July 20, 1998 Press Release.</p>  <p>The image shows the front of the InterTrax product packaging. It is a dark-colored box with white and yellow text. At the top, the 'InterTrax' logo is prominently displayed. Below the logo, there is a section titled 'Fast, Precise, Head Tracking' which describes the technology as a breakthrough in real-time head tracking for personal displays. Another section titled 'Sampling at an incredible 250Hz' explains that the device allows users to immerse themselves in computer-generated environments with smooth head movement and no distractions. A 'Full Freedom of Movement' section states that with a full three degrees of freedom (Model 3D only), the physical flexibility in the real world is duplicated in the virtual world, allowing users to look up, down, and around through 360 degrees. The 'Zero Interference' section highlights that unlike other tracking systems, InterTrax does not require a source transmitter and is not affected by electrical or magnetic interference. A 'Features' list includes: simple connection via mouse port, not affected by electrical or magnetic interference, zero jitter, high stability, exceptional speed & accuracy, sourceless operation, 3 DOF angular tracking (Model 3D only), and wide compatibility with 3D PC applications. A 'Specifications' section lists: sensor technology (Savimatrix Monitors), degrees of freedom (azimuth, elevation, & roll for Model 3D), update rate (250Hz), angular ranges (azimuth: ±180°, elevation: ±90°, roll: ±180° for Model 3D), maximum sensitivity (400 Hz azimuth, 200 Hz elevation, 200 Hz roll - Model 3D only), minimum sensitivity (2 Hz), at rest jitter (zero), latency (30ms), angular resolution (0.02° relative), interface (RS-232C), baud rate (up to 38,400), power supply (9V DC, 3.2mm Center pin +ve), and a list of standards it satisfies (EN 60950, EN 55022, EN 55024, FCC Part 15 class B, UL 1950, UL 1310 Class 2 AC Adapter, and CE Approved AC Adapter). At the bottom, the InterSense logo and company address (73 Second Avenue, Burlington, MA 01803) and website (http://www.isensea.com) are provided.</p> <p>InterTrax Packaging.</p>

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CLAIM 1	InterTrax and InterTrax 2
	 <p>InterTrax Packaging.</p> <p><i>See also</i> Defendants' Invalidity Contentions for further discussion.</p>
<p>[1.b] using a position tracker to track a position of a first localized feature associated with a limb of the user relative to the user's head.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, mounting a sourceless orientation tracker on a user's head. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See, e.g.:</i></p>

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CLAIM 1	InterTrax and InterTrax 2
	<div>A brochure for InterTrax 2. The title "INTERTRAX" is in large, bold, blue serif font, with a superscript "2" in red. Below it, the tagline "Bringing 3-D To Life" is in a smaller, blue, italicized sans-serif font. The image shows three young men wearing white VR headsets, looking towards the left. They are wearing orange polo shirts. The background is white with a large, stylized red and yellow oval shape behind the men.</div> <div>A person wearing a VR headset and holding a controller, standing in a room. The person is wearing a blue plaid shirt over a black t-shirt and black shorts. The background is a bright, colorful, abstract light effect.</div> <p>InterTrax 2 Brochure.</p>

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CLAIM 1	InterTrax and InterTrax 2																																
	<div style="border: 1px solid black; padding: 10px;"> <p style="text-align: center;">INTERTRAX² SPECIFICATIONS:</p> <table> <tr> <td>Degrees of Freedom</td><td>3 (Yaw, Pitch, and Roll)</td></tr> <tr> <td>Angular Range</td><td>Pitch ±80° Yaw ±180° Roll ±90°</td></tr> <tr> <td>Maximum Angular Rate</td><td>±720° yaw, pitch elevation, ±360° roll</td></tr> <tr> <td>Minimum Angular Rate</td><td>3° per second</td></tr> <tr> <td>Internal Update Rate</td><td>256 Hz</td></tr> <tr> <td>Internal Latency</td><td>4 milliseconds</td></tr> <tr> <td>Angular Resolution</td><td>0.02° relative</td></tr> <tr> <td>O/S Compatibility</td><td>Win98/2000</td></tr> <tr> <td>H/W Compatibility</td><td>PC, Workstations, Sony Playstation2™</td></tr> <tr> <td>Interface</td><td>USB or Serial RS-232</td></tr> <tr> <td>Protocol</td><td>Compliant with USB HID</td></tr> <tr> <td>Size</td><td>Electronics 9.4 x 2.7 x 2.7 cms</td></tr> <tr> <td>Weight</td><td>Electronics 39 grams/1.4 ounces</td></tr> <tr> <td>Cable</td><td>3 meters (series A USB cable)</td></tr> <tr> <td>Power</td><td>5 volts via USB</td></tr> <tr> <td>Power Requirements</td><td>350 mw</td></tr> </table> <p><small>Playstation2 is a trademark of Sony Computer Entertainment Inc. Specifications subject to change.</small></p> </div> <p>InterTrax 2 Brochure.</p>	Degrees of Freedom	3 (Yaw, Pitch, and Roll)	Angular Range	Pitch ±80° Yaw ±180° Roll ±90°	Maximum Angular Rate	±720° yaw, pitch elevation, ±360° roll	Minimum Angular Rate	3° per second	Internal Update Rate	256 Hz	Internal Latency	4 milliseconds	Angular Resolution	0.02° relative	O/S Compatibility	Win98/2000	H/W Compatibility	PC, Workstations, Sony Playstation2™	Interface	USB or Serial RS-232	Protocol	Compliant with USB HID	Size	Electronics 9.4 x 2.7 x 2.7 cms	Weight	Electronics 39 grams/1.4 ounces	Cable	3 meters (series A USB cable)	Power	5 volts via USB	Power Requirements	350 mw
Degrees of Freedom	3 (Yaw, Pitch, and Roll)																																
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Power Requirements	350 mw																																

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CLAIM 1	InterTrax and InterTrax 2
	<p>InterSense Introduces the InterTrax™ Motion Tracker and Expects to Expand the Use of Virtual Environments</p> <p>The InterTrax motion tracker will bring virtual environments to the professional and high-end consumer marketplace beginning with a virtual fitness trainer</p> <p>Orlando, FL –July 20, 1998 – InterSense (Booth #1317), the leading developer and supplier of motion-tracking systems for human interaction with virtual environments and 3D graphics, today introduced the InterTrax™ 20 and 30 precision motion trackers. Using InterSense's exclusive inertial tracking technology and algorithms, InterTrax relieves the jitter and complex set-up normally associated with virtual environments to create smooth, realistic 3D experiences that can easily be installed on any PC. A low price point and high performance make this tracker suitable for high-end consumers and professionals. Later this summer, InterTrax will be integrated with the Sony GlassTron™ and StairMaster FreeRunner™ to bring virtual environments to consumers in a virtual reality fitness trainer.</p> <p>InterSense July 20, 1998 Press Release.</p> <p>"InterSense has been recognized in the industry as the leading developer and manufacturer of motion-tracking technologies," said Charlie Miller, InterSense CEO. "With our flagship inertial and ultrasonic trackers, the IS-300 and IS-600, we were able to make virtual environments viable business solutions. Now, with our new line of motion trackers, the InterTrax 20 and 30, both at a lower price point, we can make the benefits of our sourceless inertial tracking technology available to an even broader professional and consumer market. With InterTrax, there is no disorienting slosh and jitter because it is based on InterSense's patented drift-corrected gyroscopic technology. With InterTrax, our goal at InterSense is to make virtual environments part of everyday life."</p> <p>InterSense July 20, 1998 Press Release.</p>

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CLAIM 1	InterTrax and InterTrax 2
	<i>See also</i> Defendants' Invalidity Contentions for further discussion.

B. DEPENDENT CLAIM 2

CLAIM 2	InterTrax and InterTrax 2
<p>[2] The method of claim 1 in which the first localized feature associated with the limb comprises a point on a hand-held object or a point on a hand-mounted object or a point on a hand.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, the method of claim 1 in which the first localized feature associated with the limb comprises a point on a hand-held object or a point on a hand-mounted object or a point on a hand. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See, e.g.:</i></p> <div> </div> <div> </div> <p>InterTrax 2 Brochure.</p>

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CLAIM 2	InterTrax and InterTrax 2
	<div> </div> <div> </div> <p>InterTrax 2 Brochure.</p> <p><i>See</i> Disclosures with respect to Claim 1, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>

C. DEPENDENT CLAIM 4

CLAIM 4	InterTrax and InterTrax 2
<p>[4] The method of claim 2, wherein the first localized feature is on a ring.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, the method of claim 2, wherein the first localized feature is on a ring. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p>

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CLAIM 4	InterTrax and InterTrax 2
	<i>See</i> Disclosures with respect to Claims 1 and 2, <i>supra</i> ; <i>see also</i> Defendants' Invalidity Contentions for further discussion.

D. DEPENDENT CLAIM 5

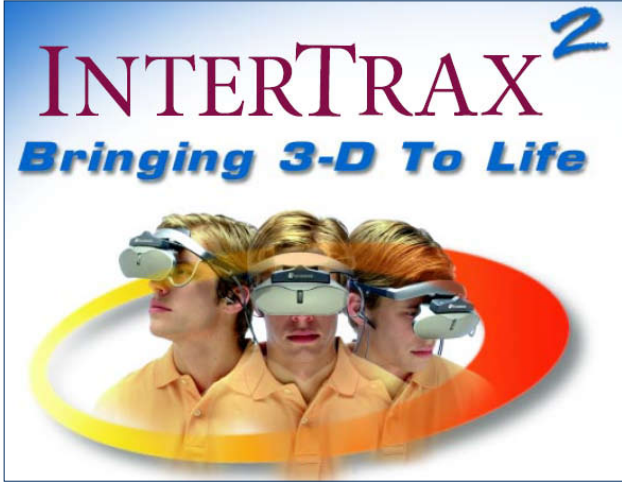

CLAIM 5	InterTrax and InterTrax 2
<p>[5] The method of claim 1 further comprising using the position tracker to determine a distance between the first localized feature and a second localized feature associated with the user's head.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, the method of claim 1 further comprising using the position tracker to determine a distance between the first localized feature and a second localized feature associated with the user's head. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See, e.g.:</i></p> <div>  </div> <div> <ul style="list-style-type: none"> ■ Next generation of the world's best-selling tracker ■ Increased functionality and accuracy ■ Priced for consumers, performance for professionals ■ Available standalone or bundled with headsets ■ Simple connection to all personal display devices ■ Available with USB or Serial Interface ■ Compatible with Playstation2, PCs and workstations ■ USB middleware and SDK available  </div> <p>InterTrax 2 Brochure.</p>

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CLAIM 5	InterTrax and InterTrax 2
	<div> </div> <div> </div> <p>InterTrax 2 Brochure.</p> <p>InterSense will take the first step in bringing virtual environments to the professional and consumer marketplace when InterTrax is incorporated with Sony's GlassTron™ personal display and into StairMaster's FreeRunner™ to create the first widely deployed virtual environment physical fitness training system. Exercisers will be able to work out in complete freedom while enjoying a computer-generated environments for fun, fitness, or competition. Lunar landscapes and more earthly environments, such as the Boston Marathon, have already been created. Eventually, fitness centers will be able to network multiple machines in the same club or across the country via the Internet and challenge other athletes to "virtual" competitions.</p> <p>InterSense July 20, 1998 Press Release.</p>

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CLAIM 5	InterTrax and InterTrax 2
	<p>Currently available for shipping, InterTrax requires a single standard RS-232 connection and can be used across virtually all host platforms, including DOS, Windows 95/NT, Windows 98/NT, MAC, Sun, UNIX, and SGI. The tracker will work in mouse emulation mode with any type of serial mouse, including Logitech and Microsoft. Additionally, mouse emulation can be used without additional software under DOS and Windows. The InterTrax 20 is available for \$795 and the InterTrax 30 is available for \$995. For more information, customers can call InterSense at 1-888-359-8478. About InterSense InterSense's motion-tracking technology measures the 3D motion of a person's head, hands, and body while allowing unconstricted movement through a virtual world. Using inertial and ultrasonic tracking, InterSense's trackers relieve the lag and jitter normally associated with virtual environments. These changes aren't cosmetic, they are</p> <p>InterSense July 20, 1998 Press Release.</p> <p>Sony and InterSense Join Forces to Supply Tracked Personal Display Systems to the Real-Time 3D Computing Market</p> <p>Burlington, Mass. - July 13, 1999 - Sony Broadcast & Professional Europe has joined forces with InterSense Inc., the leading provider of precision motion tracking systems, to provide professional users of 3D graphics with the first affordable, high performance system for exploring and interacting with real-time computer generated environments.</p> <p>InterSense and its international distribution partners will supply the full range of Sony Glasstron LDI series personal display systems bundled with the InterTraxÔ inertial tracking system. The system provides an integrated solution that allows users to view and walk through standard 3D environments in real time. This bundled product offering is compatible with a wide range of 3D software toolkits and most 3D PC software. With prices ranging from \$1,750, it is also priced to appeal to a new generation of 3D software users who were previously unable to take advantage of the benefits of visual simulation.</p>

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CLAIM 5	InterTrax and InterTrax 2
	<p>InterSense July 13, 1999 Press Release.</p> <p>Launched in July 1998, the InterTrax has already been widely adopted in such diverse application sectors as architecture, education, entertainment, interior design, marketing and research. InterSense sells its products to major corporations and leading research facilities worldwide. Its recently formed InterTrax business unit supplies affordable headsets and tracking systems to professional, entertainment, engineering and industrial markets through an international distribution network. With an increasing range of compatible software available, traditional users of CAD products can easily transition to real time visualization.</p> <p>InterSense July 13, 1999 Press Release.</p> <p><i>See</i> Disclosures with respect to Claim 1, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>

E. DEPENDENT CLAIM 7

CLAIM 7	InterTrax and InterTrax 2
<p>[7] The method of claim 1 in which the position tracker comprises an electro-optical system that tracks LEDs, optical sensors or reflective marks.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, the method of claim 1 in which the position tracker comprises an electro-optical system that tracks LEDs, optical sensors or reflective marks. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See</i> Disclosures with respect to Claim 1, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>

Exhibit A-19

F. DEPENDENT CLAIM 8

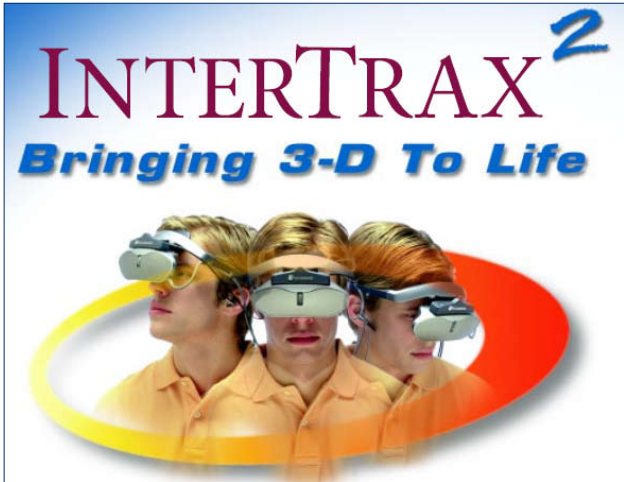

CLAIM 8	InterTrax and InterTrax 2
<p>[8] The method of claim 1 in which the position tracker comprises a video machine-vision device that recognizes the first localized feature.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, the method of claim 1 in which the position tracker comprises a video machine-vision device that recognizes the first localized feature. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See, e.g.:</i></p> <div>  </div> <div> <ul style="list-style-type: none"> ■ Next generation of the world's best-selling tracker ■ Increased functionality and accuracy ■ Priced for consumers, performance for professionals ■ Available standalone or bundled with headsets ■ Simple connection to all personal display devices ■ Available with USB or Serial Interface ■ Compatible with Playstation2, PCs and workstations ■ USB middleware and SDK available <div> <p>The Smallest High Performance</p>  <p>Head Tracker in the World</p> <p>INTERSENSE</p> <p>www.isense.com</p> </div> </div> <p>InterTrax 2 Brochure.</p>

Exhibit A-19

CLAIM 8	InterTrax and InterTrax 2
	<div> </div> <div> </div> <p>InterTrax 2 Brochure.</p> <p><i>See</i> Disclosures with respect to Claim 1, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>

G. DEPENDENT CLAIM 11

CLAIM 11	InterTrax and InterTrax 2
<p>[11] The method of claim 1 in which the sourceless orientation tracker comprises an inertial sensor.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, the method of claim 1 in which the sourceless orientation tracker comprises an inertial sensor. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See, e.g.:</i></p>

Exhibit A-19

CLAIM 11	InterTrax and InterTrax 2
	<div>  </div> <div> <ul style="list-style-type: none"> ■ Next generation of the world's best-selling tracker ■ Increased functionality and accuracy ■ Priced for consumers, performance for professionals ■ Available standalone or bundled with headsets ■ Simple connection to all personal display devices ■ Available with USB or Serial Interface ■ Compatible with Playstation2, PCs and workstations ■ USB middleware and SDK available <p>The Smallest High Performance</p>  <p>Head Tracker in the World</p> <p>INTERSENSE www.isense.com</p> </div> <p>InterTrax 2 Brochure.</p> <div>  </div> <div>  <p>INTERTRAX² is available standalone or bundled with headsets</p> <p>INTERTRAX²</p> </div>

Exhibit A-19

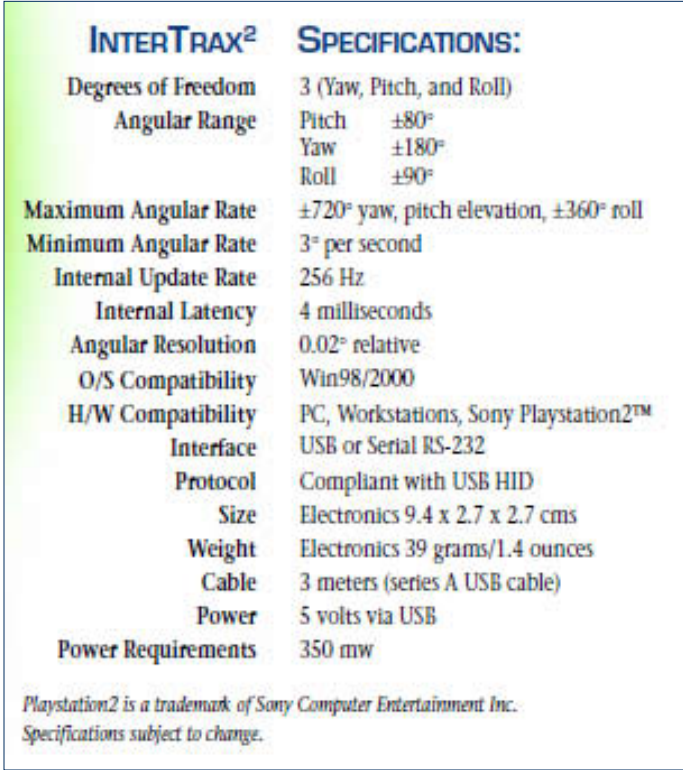
CLAIM 11	InterTrax and InterTrax 2																																
	<p>InterTrax 2 Brochure.</p> <div>  <p>INTERTRAX² SPECIFICATIONS:</p> <table> <tr> <td>Degrees of Freedom</td><td>3 (Yaw, Pitch, and Roll)</td></tr> <tr> <td>Angular Range</td><td>Pitch ±80° Yaw ±180° Roll ±90°</td></tr> <tr> <td>Maximum Angular Rate</td><td>±720° yaw, pitch elevation, ±360° roll</td></tr> <tr> <td>Minimum Angular Rate</td><td>3° per second</td></tr> <tr> <td>Internal Update Rate</td><td>256 Hz</td></tr> <tr> <td>Internal Latency</td><td>4 milliseconds</td></tr> <tr> <td>Angular Resolution</td><td>0.02° relative</td></tr> <tr> <td>O/S Compatibility</td><td>Win98/2000</td></tr> <tr> <td>H/W Compatibility</td><td>PC, Workstations, Sony Playstation2™</td></tr> <tr> <td>Interface</td><td>USB or Serial RS-232</td></tr> <tr> <td>Protocol</td><td>Compliant with USB HID</td></tr> <tr> <td>Size</td><td>Electronics 9.4 x 2.7 x 2.7 cms</td></tr> <tr> <td>Weight</td><td>Electronics 39 grams/1.4 ounces</td></tr> <tr> <td>Cable</td><td>3 meters (series A USB cable)</td></tr> <tr> <td>Power</td><td>5 volts via USB</td></tr> <tr> <td>Power Requirements</td><td>350 mw</td></tr> </table> <p><i>Playstation2 is a trademark of Sony Computer Entertainment Inc. Specifications subject to change.</i></p> </div> <p>InterTrax 2 Brochure.</p>	Degrees of Freedom	3 (Yaw, Pitch, and Roll)	Angular Range	Pitch ±80° Yaw ±180° Roll ±90°	Maximum Angular Rate	±720° yaw, pitch elevation, ±360° roll	Minimum Angular Rate	3° per second	Internal Update Rate	256 Hz	Internal Latency	4 milliseconds	Angular Resolution	0.02° relative	O/S Compatibility	Win98/2000	H/W Compatibility	PC, Workstations, Sony Playstation2™	Interface	USB or Serial RS-232	Protocol	Compliant with USB HID	Size	Electronics 9.4 x 2.7 x 2.7 cms	Weight	Electronics 39 grams/1.4 ounces	Cable	3 meters (series A USB cable)	Power	5 volts via USB	Power Requirements	350 mw
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Exhibit A-19

CLAIM 11	InterTrax and InterTrax 2
	<p>"InterSense has been recognized in the industry as the leading developer and manufacturer of motion-tracking technologies," said Charlie Miller, InterSense CEO. "With our flagship inertial and ultrasonic trackers, the IS-300 and IS-600, we were able to make virtual environments viable business solutions. Now, with our new line of motion trackers, the InterTrax 20 and 30, both at a lower price point, we can make the benefits of our sourceless inertial tracking technology available to an even broader professional and consumer market. With InterTrax, there is no disorienting slosh and jitter because it is based on InterSense's patented drift-corrected gyroscopic technology. With InterTrax, our goal at InterSense is to make virtual environments part of everyday life."</p> <p>InterSense July 20, 1998 Press Release.</p> <p><i>See</i> Disclosures with respect to Claim 1, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>

H. DEPENDENT CLAIM 12

CLAIM 12	InterTrax and InterTrax 2
<p>[12] The method of claim 1 in which the sourceless orientation tracker comprises a tilt-sensor.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, the method of claim 1 in which the sourceless orientation tracker comprises a tilt-sensor. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See</i> Disclosures with respect to Claim 1, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>

Exhibit A-19

I. DEPENDENT CLAIM 14

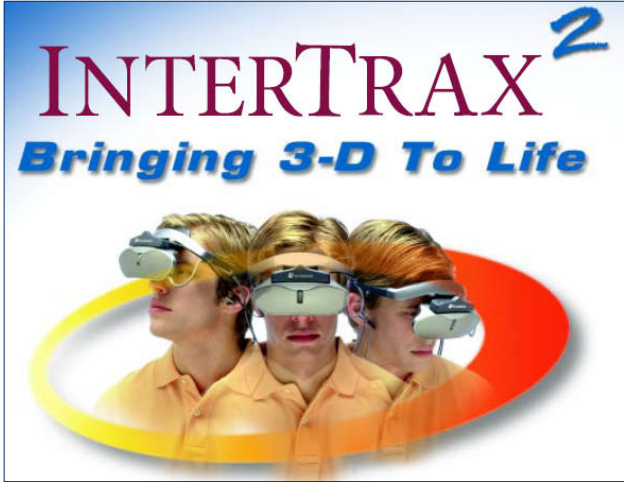

CLAIM 14	InterTrax and InterTrax 2
<p>[14] The method of claim 1 further comprising:</p> <p>mounting a display device on the user's head; and</p> <p>displaying a first object at a first position on the display device.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, the method of claim 1 further comprising mounting a display device on the user's head, and displaying a first object at a first position on the display device. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See, e.g.:</i></p> <div>  <p>The brochure for InterTrax 2 features the title 'INTERTRAX 2' in large, stylized letters, with 'Bringing 3-D To Life' below it. The central image shows three people wearing head-mounted display (HMD) devices, looking forward. The background is a gradient of blue and white.</p> </div> <div>  <p>This section contains a list of features for the InterSense head tracker, arranged in two columns. The features are: 'Next generation of the world's best-selling tracker', 'Increased functionality and accuracy', 'Priced for consumers, performance for professionals', 'Available standalone or bundled with headsets', 'Simple connection to all personal display devices', 'Available with USB or Serial Interface', 'Compatible with Playstation2, PCs and workstations', and 'USB middleware and SDK available'. Below the list is an image of the InterSense head tracker device, which is a small, dark, rectangular unit with a camera lens. The text 'The Smallest High Performance' is curved above the device, and 'Head Tracker in the World' is curved below it. The InterSense logo, consisting of a stylized 'i' and 'S' inside a circle, is to the left of the device. Below the device is the text 'INTERSENSE' in large, bold letters, and 'www.isense.com' in smaller letters.</p> </div> <p>InterTrax 2 Brochure.</p>

Exhibit A-19

CLAIM 14	InterTrax and InterTrax 2
	<div> </div> <div> </div> <p>InterTrax 2 Brochure.</p>

Exhibit A-19

CLAIM 14	InterTrax and InterTrax 2																																
	<div> <p>INTERTRAX² SPECIFICATIONS:</p> <table> <tr> <td>Degrees of Freedom</td><td>3 (Yaw, Pitch, and Roll)</td></tr> <tr> <td>Angular Range</td><td>Pitch ±80° Yaw ±180° Roll ±90°</td></tr> <tr> <td>Maximum Angular Rate</td><td>±720° yaw, pitch elevation, ±360° roll</td></tr> <tr> <td>Minimum Angular Rate</td><td>3° per second</td></tr> <tr> <td>Internal Update Rate</td><td>256 Hz</td></tr> <tr> <td>Internal Latency</td><td>4 milliseconds</td></tr> <tr> <td>Angular Resolution</td><td>0.02° relative</td></tr> <tr> <td>O/S Compatibility</td><td>Win98/2000</td></tr> <tr> <td>H/W Compatibility</td><td>PC, Workstations, Sony Playstation2™</td></tr> <tr> <td>Interface</td><td>USB or Serial RS-232</td></tr> <tr> <td>Protocol</td><td>Compliant with USB HID</td></tr> <tr> <td>Size</td><td>Electronics 9.4 x 2.7 x 2.7 cms</td></tr> <tr> <td>Weight</td><td>Electronics 39 grams/1.4 ounces</td></tr> <tr> <td>Cable</td><td>3 meters (series A USB cable)</td></tr> <tr> <td>Power</td><td>5 volts via USB</td></tr> <tr> <td>Power Requirements</td><td>350 mw</td></tr> </table> <p><small>Playstation2 is a trademark of Sony Computer Entertainment Inc. Specifications subject to change.</small></p> </div> <p>InterTrax 2 Brochure.</p> <p>See Disclosures with respect to Claim 1, <i>supra</i>; see also Defendants' Invalidity Contentions for further discussion.</p>	Degrees of Freedom	3 (Yaw, Pitch, and Roll)	Angular Range	Pitch ±80° Yaw ±180° Roll ±90°	Maximum Angular Rate	±720° yaw, pitch elevation, ±360° roll	Minimum Angular Rate	3° per second	Internal Update Rate	256 Hz	Internal Latency	4 milliseconds	Angular Resolution	0.02° relative	O/S Compatibility	Win98/2000	H/W Compatibility	PC, Workstations, Sony Playstation2™	Interface	USB or Serial RS-232	Protocol	Compliant with USB HID	Size	Electronics 9.4 x 2.7 x 2.7 cms	Weight	Electronics 39 grams/1.4 ounces	Cable	3 meters (series A USB cable)	Power	5 volts via USB	Power Requirements	350 mw
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Power Requirements	350 mw																																

Exhibit A-19

J. DEPENDENT CLAIM 15

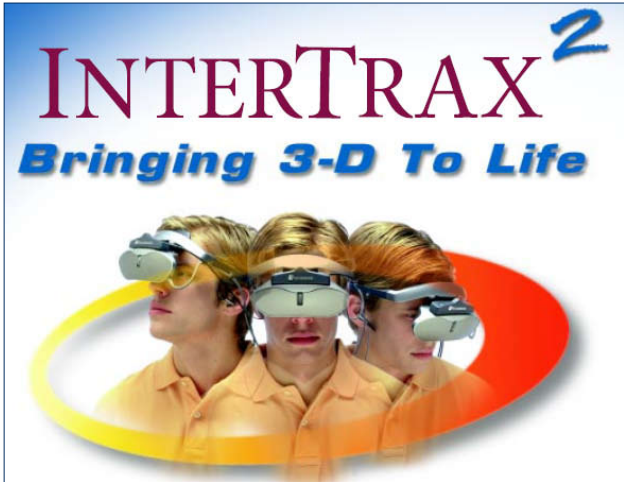

CLAIM 15	InterTrax and InterTrax 2
<p>[15] The method of claim 14 further comprising:</p> <p>changing the orientation of the display device; and</p> <p>after changing the orientation of the display device, redisplaying the first object at a second position on the display device based on the change in orientation.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, the method of claim 14 further comprising changing the orientation of the display device, and after changing the orientation of the display device, redisplaying the first object at a second position on the display device based on the change in orientation. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See, e.g.:</i></p> <div>  <p>The brochure for InterTrax 2 features the title 'INTERTRAX² Bringing 3-D To Life' in large, stylized letters. Below the title is a photograph of three people wearing VR headsets, with a glowing orange and yellow circular graphic behind them.</p> </div> <div>  <p>The InterSense brochure lists features in two columns: <ul style="list-style-type: none"> Next generation of the world's best-selling tracker Increased functionality and accuracy Priced for consumers, performance for professionals Available standalone or bundled with headsets Simple connection to all personal display devices Available with USB or Serial Interface Compatible with Playstation2, PCs and workstations USB middleware and SDK available Below the list is a photograph of the InterSense head tracker device, a small blue and black unit. Text around the device reads 'The Smallest High Performance' and 'Head Tracker in the World'. The InterSense logo and website 'www.isense.com' are at the bottom.</p> </div> <p>InterTrax 2 Brochure.</p>

Exhibit A-19

CLAIM 15	InterTrax and InterTrax 2
	<div></div> <div></div> <p>InterTrax 2 Brochure.</p>

Exhibit A-19

CLAIM 15	InterTrax and InterTrax 2																																
	<div> <p>INTERTRAX² SPECIFICATIONS:</p> <table> <tr> <td>Degrees of Freedom</td><td>3 (Yaw, Pitch, and Roll)</td></tr> <tr> <td>Angular Range</td><td>Pitch ±80° Yaw ±180° Roll ±90°</td></tr> <tr> <td>Maximum Angular Rate</td><td>±720° yaw, pitch elevation, ±360° roll</td></tr> <tr> <td>Minimum Angular Rate</td><td>3° per second</td></tr> <tr> <td>Internal Update Rate</td><td>256 Hz</td></tr> <tr> <td>Internal Latency</td><td>4 milliseconds</td></tr> <tr> <td>Angular Resolution</td><td>0.02° relative</td></tr> <tr> <td>O/S Compatibility</td><td>Win98/2000</td></tr> <tr> <td>H/W Compatibility</td><td>PC, Workstations, Sony Playstation2™</td></tr> <tr> <td>Interface</td><td>USB or Serial RS-232</td></tr> <tr> <td>Protocol</td><td>Compliant with USB HID</td></tr> <tr> <td>Size</td><td>Electronics 9.4 x 2.7 x 2.7 cms</td></tr> <tr> <td>Weight</td><td>Electronics 39 grams/1.4 ounces</td></tr> <tr> <td>Cable</td><td>3 meters (series A USB cable)</td></tr> <tr> <td>Power</td><td>5 volts via USB</td></tr> <tr> <td>Power Requirements</td><td>350 mw</td></tr> </table> <p><i>Playstation2 is a trademark of Sony Computer Entertainment Inc. Specifications subject to change.</i></p> </div> <p>InterTrax 2 Brochure.</p> <p>See Disclosures with respect to Claims 1 and 14, <i>supra</i>; see also Defendants' Invalidity Contentions for further discussion.</p>	Degrees of Freedom	3 (Yaw, Pitch, and Roll)	Angular Range	Pitch ±80° Yaw ±180° Roll ±90°	Maximum Angular Rate	±720° yaw, pitch elevation, ±360° roll	Minimum Angular Rate	3° per second	Internal Update Rate	256 Hz	Internal Latency	4 milliseconds	Angular Resolution	0.02° relative	O/S Compatibility	Win98/2000	H/W Compatibility	PC, Workstations, Sony Playstation2™	Interface	USB or Serial RS-232	Protocol	Compliant with USB HID	Size	Electronics 9.4 x 2.7 x 2.7 cms	Weight	Electronics 39 grams/1.4 ounces	Cable	3 meters (series A USB cable)	Power	5 volts via USB	Power Requirements	350 mw
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Power Requirements	350 mw																																

Exhibit A-19

K. DEPENDENT CLAIM 16

CLAIM 16	InterTrax and InterTrax 2
<p>[16] The method of claim 15, wherein the second position is determined so as to make the position of the first object appear to be fixed relative to a first coordinate reference frame, which frame does not rotate with the display device during said changing of the orientation of the display device.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, the method of claim 15, wherein the second position is determined so as to make the position of the first object appear to be fixed relative to a first coordinate reference frame, which frame does not rotate with the display device during said changing of the orientation of the display device. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See</i> Disclosures with respect to Claims 1 and 15, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>

L. DEPENDENT CLAIM 17

CLAIM 17	InterTrax and InterTrax 2
<p>[17] The method of claim 16, wherein the first object is displayed in response to a signal from a computer.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, the method of claim 16, wherein the first object is displayed in response to a signal from a computer. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See, e.g.:</i></p>

Exhibit A-19

CLAIM 17	InterTrax and InterTrax 2
	<div>  <p>INTERTRAX² <i>Bringing 3-D To Life</i></p> </div> <div> <ul style="list-style-type: none"> ■ Next generation of the world's best-selling tracker ■ Increased functionality and accuracy ■ Priced for consumers, performance for professionals ■ Available standalone or bundled with headsets ■ Simple connection to all personal display devices ■ Available with USB or Serial Interface ■ Compatible with Playstation2, PCs and workstations ■ USB middleware and SDK available <p><i>The Smallest High Performance</i></p>  <p><i>Head Tracker in the World</i></p> <p>INTERSENSE www.isense.com</p> </div> <p>InterTrax 2 Brochure.</p> <div>  </div> <div>  <p><i>INTERTRAX² is available standalone or bundled with headsets</i></p> <p>INTERTRAX²</p> </div>

Exhibit A-19

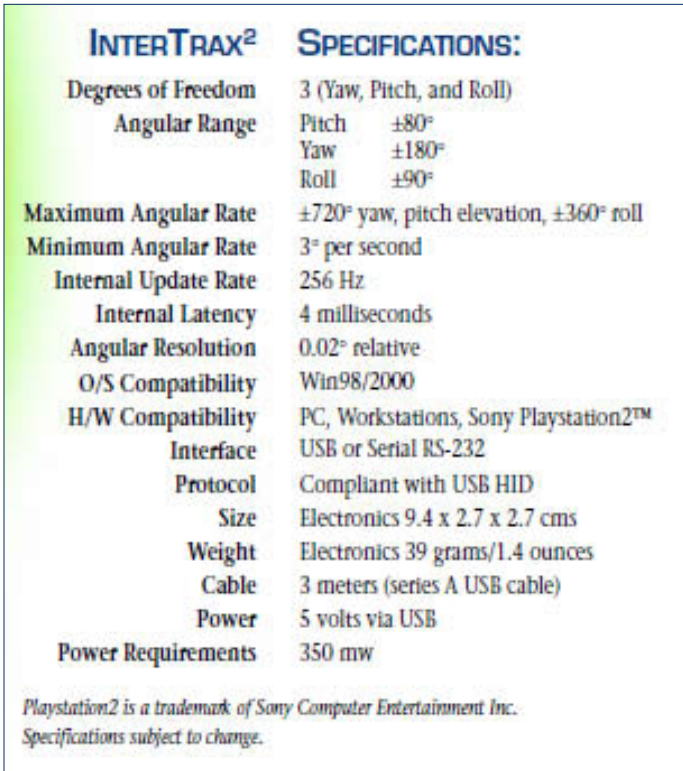
CLAIM 17	InterTrax and InterTrax 2																																
	<p>InterTrax 2 Brochure.</p> <div>  <p>INTERTRAX² SPECIFICATIONS:</p> <table> <tr> <td>Degrees of Freedom</td><td>3 (Yaw, Pitch, and Roll)</td></tr> <tr> <td>Angular Range</td><td>Pitch ±80° Yaw ±180° Roll ±90°</td></tr> <tr> <td>Maximum Angular Rate</td><td>±720° yaw, pitch elevation, ±360° roll</td></tr> <tr> <td>Minimum Angular Rate</td><td>3° per second</td></tr> <tr> <td>Internal Update Rate</td><td>256 Hz</td></tr> <tr> <td>Internal Latency</td><td>4 milliseconds</td></tr> <tr> <td>Angular Resolution</td><td>0.02° relative</td></tr> <tr> <td>O/S Compatibility</td><td>Win98/2000</td></tr> <tr> <td>H/W Compatibility</td><td>PC, Workstations, Sony Playstation2™</td></tr> <tr> <td>Interface</td><td>USB or Serial RS-232</td></tr> <tr> <td>Protocol</td><td>Compliant with USB HID</td></tr> <tr> <td>Size</td><td>Electronics 9.4 x 2.7 x 2.7 cms</td></tr> <tr> <td>Weight</td><td>Electronics 39 grams/1.4 ounces</td></tr> <tr> <td>Cable</td><td>3 meters (series A USB cable)</td></tr> <tr> <td>Power</td><td>5 volts via USB</td></tr> <tr> <td>Power Requirements</td><td>350 mw</td></tr> </table> <p><i>Playstation2 is a trademark of Sony Computer Entertainment Inc. Specifications subject to change.</i></p> </div> <p>InterTrax 2 Brochure.</p>	Degrees of Freedom	3 (Yaw, Pitch, and Roll)	Angular Range	Pitch ±80° Yaw ±180° Roll ±90°	Maximum Angular Rate	±720° yaw, pitch elevation, ±360° roll	Minimum Angular Rate	3° per second	Internal Update Rate	256 Hz	Internal Latency	4 milliseconds	Angular Resolution	0.02° relative	O/S Compatibility	Win98/2000	H/W Compatibility	PC, Workstations, Sony Playstation2™	Interface	USB or Serial RS-232	Protocol	Compliant with USB HID	Size	Electronics 9.4 x 2.7 x 2.7 cms	Weight	Electronics 39 grams/1.4 ounces	Cable	3 meters (series A USB cable)	Power	5 volts via USB	Power Requirements	350 mw
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H/W Compatibility	PC, Workstations, Sony Playstation2™																																
Interface	USB or Serial RS-232																																
Protocol	Compliant with USB HID																																
Size	Electronics 9.4 x 2.7 x 2.7 cms																																
Weight	Electronics 39 grams/1.4 ounces																																
Cable	3 meters (series A USB cable)																																
Power	5 volts via USB																																
Power Requirements	350 mw																																

Exhibit A-19

CLAIM 17	InterTrax and InterTrax 2
	<p>InterSense Introduces the InterTrax™ Motion Tracker and Expects to Expand the Use of Virtual Environments</p> <p>The InterTrax motion tracker will bring virtual environments to the professional and high-end consumer marketplace beginning with a virtual fitness trainer</p> <p>Orlando, FL –July 20, 1998 – InterSense (Booth #1317), the leading developer and supplier of motion-tracking systems for human interaction with virtual environments and 3D graphics, today introduced the InterTrax™ 20 and 30 precision motion trackers. Using InterSense's exclusive inertial tracking technology and algorithms, InterTrax relieves the jitter and complex set-up normally associated with virtual environments to create smooth, realistic 3D experiences that can easily be installed on any PC. A low price point and high performance make this tracker suitable for high-end consumers and professionals. Later this summer, InterTrax will be integrated with the Sony GlassTron™ and StairMaster FreeRunner™ to bring virtual environments to consumers in a virtual reality fitness trainer.</p> <p>InterSense July 20, 1998 Press Release.</p> <p>InterSense will take the first step in bringing virtual environments to the professional and consumer marketplace when InterTrax is incorporated with Sony's GlassTron™ personal display and into StairMaster's FreeRunner™ to create the first widely deployed virtual environment physical fitness training system. Exercisers will be able to work out in complete freedom while enjoying a computer-generated environments for fun, fitness, or competition. Lunar landscapes and more earthly environments, such as the Boston Marathon, have already been created. Eventually, fitness centers will be able to network multiple machines in the same club or across the country via the Internet and challenge other athletes to "virtual" competitions.</p> <p>InterSense July 20, 1998 Press Release.</p>

Exhibit A-19

CLAIM 17	InterTrax and InterTrax 2
	<p>More than any other motion tracker on the market, InterTrax offers high performance and ease of use, there is no source to set up and no configuration software required. The unit comes with an ergonomic curved adapter plate which attaches with Velcro onto the back of any head-mounted display. InterTrax plugs directly into a PC serial port without a separate electronics processing box, and has a single button conveniently accessible on the back for resetting the orientation at the start of a session. The tracker can be used in mouse emulation mode for instant compatibility with many 3D applications, or, for improved performance, can be used in native mode via a simplified protocol allowing for rapid integration by software developers.</p> <p>InterSense July 20, 1998 Press Release.</p> <p>Currently available for shipping, InterTrax requires a single standard RS-232 connection and can be used across virtually all host platforms, including DOS, Windows 95/NT, Windows 98/NT, MAC, Sun, UNIX, and SGI. The tracker will work in mouse emulation mode with any type of serial mouse, including Logitech and Microsoft. Additionally, mouse emulation can be used without additional software under DOS and Windows. The InterTrax 20 is available for \$795 and the InterTrax 30 is available for \$995. For more information, customers can call InterSense at 1-888-359-8478. About InterSense InterSense's motion-tracking technology measures the 3D motion of a person's head, hands, and body while allowing unconstricted movement through a virtual world. Using inertial and ultrasonic tracking, InterSense's trackers relieve the lag and jitter normally associated with virtual environments. These changes aren't cosmetic, they are</p> <p>InterSense July 20, 1998 Press Release.</p>

Exhibit A-19

CLAIM 17	InterTrax and InterTrax 2
	<p>Sony and InterSense Join Forces to Supply Tracked Personal Display Systems to the Real-Time 3D Computing Market</p> <p>Burlington, Mass. - July 13, 1999 - Sony Broadcast & Professional Europe has joined forces with InterSense Inc., the leading provider of precision motion tracking systems, to provide professional users of 3D graphics with the first affordable, high performance system for exploring and interacting with real-time computer generated environments.</p> <p>InterSense and its international distribution partners will supply the full range of Sony Glasstron LDI series personal display systems bundled with the InterTraxÔ inertial tracking system. The system provides an integrated solution that allows users to view and walk through standard 3D environments in real time. This bundled product offering is compatible with a wide range of 3D software toolkits and most 3D PC software. With prices ranging from \$1,750, it is also priced to appeal to a new generation of 3D software users who were previously unable to take advantage of the benefits of visual simulation.</p> <p>InterSense July 13, 1999 Press Release.</p> <p>Launched in July 1998, the InterTrax has already been widely adopted in such diverse application sectors as architecture, education, entertainment, interior design, marketing and research. InterSense sells its products to major corporations and leading research facilities worldwide. Its recently formed InterTrax business unit supplies affordable headsets and tracking systems to professional, entertainment, engineering and industrial markets through an international distribution network. With an increasing range of compatible software available, traditional users of CAD products can easily transition to real time visualization.</p> <p>InterSense July 13, 1999 Press Release.</p>

Exhibit A-19

CLAIM 17	InterTrax and InterTrax 2
	See Disclosures with respect to Claims 1 and 16, <i>supra</i> ; see also Defendants' Invalidity Contentions for further discussion.

M. DEPENDENT CLAIM 18

CLAIM 18	InterTrax and InterTrax 2
<p>[18] The method of claim 17, further comprising:</p> <p>mounting a wearable computer on the user's body, and wherein the first object is displayed in response to a signal from the wearable computer.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, the method of claim 17, further comprising mounting a wearable computer on the user's body, and wherein the first object is displayed in response to a signal from the wearable computer. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See, e.g.:</i></p> <div> </div> <div> </div> <p>InterTrax 2 Brochure.</p>

Exhibit A-19

CLAIM 18	InterTrax and InterTrax 2
	<div></div> <div></div> <p>InterTrax 2 Brochure.</p>

Exhibit A-19

CLAIM 18	InterTrax and InterTrax 2																																								
	<div> <table> <tr> <th>INTERTRAX²</th><th>SPECIFICATIONS:</th></tr> <tr> <td>Degrees of Freedom</td><td>3 (Yaw, Pitch, and Roll)</td></tr> <tr> <td>Angular Range</td><td>Pitch ±80°</td></tr> <tr> <td></td><td>Yaw ±180°</td></tr> <tr> <td></td><td>Roll ±90°</td></tr> <tr> <td>Maximum Angular Rate</td><td>±720° yaw, pitch elevation, ±360° roll</td></tr> <tr> <td>Minimum Angular Rate</td><td>3° per second</td></tr> <tr> <td>Internal Update Rate</td><td>256 Hz</td></tr> <tr> <td>Internal Latency</td><td>4 milliseconds</td></tr> <tr> <td>Angular Resolution</td><td>0.02° relative</td></tr> <tr> <td>O/S Compatibility</td><td>Win98/2000</td></tr> <tr> <td>H/W Compatibility</td><td>PC, Workstations, Sony Playstation2™</td></tr> <tr> <td>Interface</td><td>USB or Serial RS-232</td></tr> <tr> <td>Protocol</td><td>Compliant with USB HID</td></tr> <tr> <td>Size</td><td>Electronics 9.4 x 2.7 x 2.7 cms</td></tr> <tr> <td>Weight</td><td>Electronics 39 grams/1.4 ounces</td></tr> <tr> <td>Cable</td><td>3 meters (series A USB cable)</td></tr> <tr> <td>Power</td><td>5 volts via USB</td></tr> <tr> <td>Power Requirements</td><td>350 mw</td></tr> <tr> <td colspan="2"> <i>Playstation2 is a trademark of Sony Computer Entertainment Inc. Specifications subject to change.</i> </td></tr> </table> </div> <p>InterTrax 2 Brochure.</p> <p><i>See</i> Disclosures with respect to Claims 1 and 16, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>	INTERTRAX ²	SPECIFICATIONS:	Degrees of Freedom	3 (Yaw, Pitch, and Roll)	Angular Range	Pitch ±80°		Yaw ±180°		Roll ±90°	Maximum Angular Rate	±720° yaw, pitch elevation, ±360° roll	Minimum Angular Rate	3° per second	Internal Update Rate	256 Hz	Internal Latency	4 milliseconds	Angular Resolution	0.02° relative	O/S Compatibility	Win98/2000	H/W Compatibility	PC, Workstations, Sony Playstation2™	Interface	USB or Serial RS-232	Protocol	Compliant with USB HID	Size	Electronics 9.4 x 2.7 x 2.7 cms	Weight	Electronics 39 grams/1.4 ounces	Cable	3 meters (series A USB cable)	Power	5 volts via USB	Power Requirements	350 mw	<i>Playstation2 is a trademark of Sony Computer Entertainment Inc. Specifications subject to change.</i>	
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Exhibit A-19

N. DEPENDENT CLAIM 19

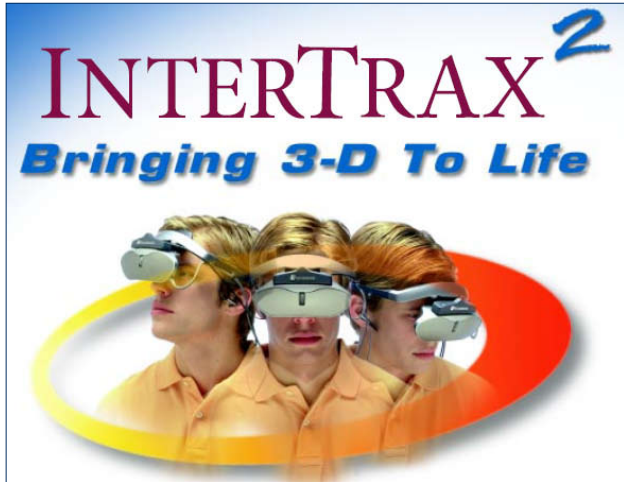

CLAIM 19	InterTrax and InterTrax 2
<p>[19] The method of claim 15, further comprising displaying a portion of a virtual environment on the display device.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, the method of claim 15, further comprising displaying a portion of a virtual environment on the display device. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See, e.g.:</i></p> <div>  <p>The image shows the front cover of the InterTrax 2 brochure. At the top, the text 'INTERTRAX' is written in a large, serif font, with a superscripted '2' to its right. Below this, the tagline 'Bringing 3-D To Life' is written in a blue, italicized sans-serif font. The central image features three men wearing InterTrax head-mounted displays, looking towards the left. They are wearing orange polo shirts. The background of the image is a gradient of blue and white, with a large, stylized orange and yellow swoosh behind the men.</p> </div> <div>  <p>The image shows the back cover of the InterSense brochure. It features a list of bullet points in two columns, a central image of the InterSense head tracker, and the company logo at the bottom. The bullet points are: 'Next generation of the world's best-selling tracker', 'Increased functionality and accuracy', 'Priced for consumers, performance for professionals', 'Available standalone or bundled with headsets', 'Simple connection to all personal display devices', 'Available with USB or Serial Interface', 'Compatible with Playstation2, PCs and workstations', and 'USB middleware and SDK available'. The central image shows the InterSense head tracker, a small, dark, rectangular device with a camera lens and sensors. The text 'The Smallest High Performance' is written in a blue, italicized sans-serif font above the device, and 'Head Tracker in the World' is written in a blue, italicized sans-serif font below it. The InterSense logo, which consists of a stylized 'i' inside a blue circle, is to the left of the company name 'INTERSENSE' in a large, serif font. Below the company name is the website address 'www.isense.com'.</p> </div> <p>InterTrax 2 Brochure.</p>

Exhibit A-19

CLAIM 19	InterTrax and InterTrax 2
	<div> </div> <div> </div> <p>InterTrax 2 Brochure.</p>

Exhibit A-19

CLAIM 19	<p>InterTrax and InterTrax 2</p> <div> <div> <p>INTERTRAX²</p> <p>Degrees of Freedom</p> <p>Angular Range</p> <p>Maximum Angular Rate</p> <p>Minimum Angular Rate</p> <p>Internal Update Rate</p> <p>Internal Latency</p> <p>Angular Resolution</p> <p>O/S Compatibility</p> <p>H/W Compatibility</p> <p>Interface</p> <p>Protocol</p> <p>Size</p> <p>Weight</p> <p>Cable</p> <p>Power</p> <p>Power Requirements</p> </div> <div> <p>SPECIFICATIONS:</p> <p>3 (Yaw, Pitch, and Roll)</p> <p>Pitch ±80°</p> <p>Yaw ±180°</p> <p>Roll ±90°</p> <p>±720° yaw, pitch elevation, ±360° roll</p> <p>3° per second</p> <p>256 Hz</p> <p>4 milliseconds</p> <p>0.02° relative</p> <p>Win98/2000</p> <p>PC, Workstations, Sony Playstation2™</p> <p>USB or Serial RS-232</p> <p>Compliant with USB HID</p> <p>Electronics 9.4 x 2.7 x 2.7 cms</p> <p>Electronics 39 grams/1.4 ounces</p> <p>3 meters (series A USB cable)</p> <p>5 volts via USB</p> <p>350 mw</p> </div> </div> <p><i>Playstation2 is a trademark of Sony Computer Entertainment Inc. Specifications subject to change.</i></p> <p>InterTrax 2 Brochure.</p> <p>InterSense will take the first step in bringing virtual environments to the professional and consumer marketplace when InterTrax is incorporated with Sony's</p>
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Exhibit A-19

CLAIM 19	InterTrax and InterTrax 2
	<p>GlassTron™ personal display and into StairMaster's FreeRunner™ to create the first widely deployed virtual environment physical fitness training system. Exercisers will be able to work out in complete freedom while enjoying a computer-generated environments for fun, fitness, or competition. Lunar landscapes and more earthly environments, such as the Boston Marathon, have already been created. Eventually, fitness centers will be able to network multiple machines in the same club or across the country via the Internet and challenge other athletes to "virtual" competitions.</p> <p>InterSense July 20, 1998 Press Release.</p> <p>See Disclosures with respect to Claim 15, <i>supra</i>; see also Defendants' Invalidity Contentions for further discussion.</p>

O. DEPENDENT CLAIM 20

CLAIM 20	InterTrax and InterTrax 2
<p>[20] The method of claim 19, further comprising:</p> <p>displaying a portion of the virtual environment on the display device before changing the orientation of the display device, and displaying a different portion of the virtual environment on the display device after</p>	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, the method of claim 19, further comprising displaying a portion of the virtual environment on the display device before changing the orientation of the display device, and displaying a different portion of the virtual environment on the display device after changing the orientation of the display device. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p>See Disclosures with respect to Claim 19, <i>supra</i>; see also Defendants' Invalidity Contentions for further discussion.</p>

Exhibit A-19

CLAIM 20	InterTrax and InterTrax 2
changing the orientation of the display device.	

P. DEPENDENT CLAIM 23

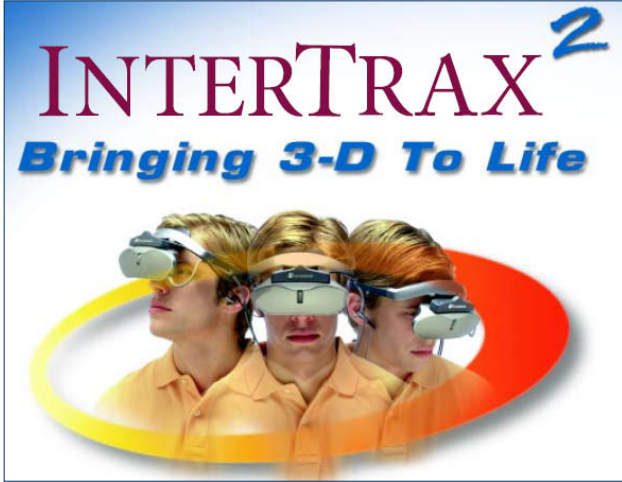
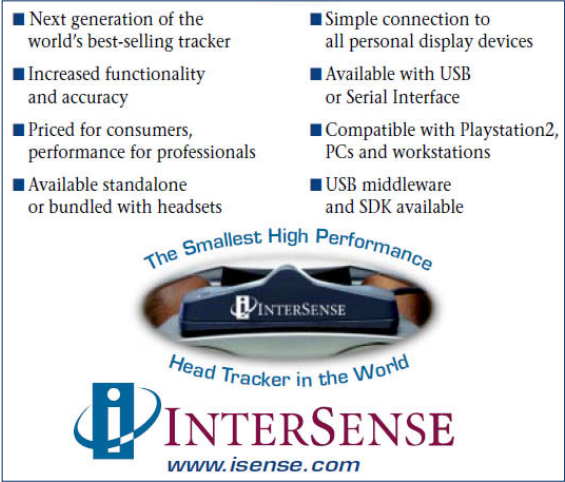
CLAIM 23	InterTrax and InterTrax 2
[23] The method of claim 15, further comprising displaying a graphical user interface for a computer on the display device.	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, the method of claim 15, further comprising displaying a graphical user interface for a computer on the display device. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See, e.g.:</i></p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p>InterTrax 2 Brochure.</p> </div> <div style="text-align: center;">  </div> </div>

Exhibit A-19

CLAIM 23	InterTrax and InterTrax 2
	<div> </div> <div> </div> <p>InterTrax 2 Brochure.</p>

Exhibit A-19

CLAIM 23	InterTrax and InterTrax 2																																
	<div style="border: 1px solid black; padding: 10px;"> <p style="text-align: center;">INTERTRAX² SPECIFICATIONS:</p> <table> <tr> <td>Degrees of Freedom</td><td>3 (Yaw, Pitch, and Roll)</td></tr> <tr> <td>Angular Range</td><td>Pitch ±80° Yaw ±180° Roll ±90°</td></tr> <tr> <td>Maximum Angular Rate</td><td>±720° yaw, pitch elevation, ±360° roll</td></tr> <tr> <td>Minimum Angular Rate</td><td>3° per second</td></tr> <tr> <td>Internal Update Rate</td><td>256 Hz</td></tr> <tr> <td>Internal Latency</td><td>4 milliseconds</td></tr> <tr> <td>Angular Resolution</td><td>0.02° relative</td></tr> <tr> <td>O/S Compatibility</td><td>Win98/2000</td></tr> <tr> <td>H/W Compatibility</td><td>PC, Workstations, Sony Playstation2™</td></tr> <tr> <td>Interface</td><td>USB or Serial RS-232</td></tr> <tr> <td>Protocol</td><td>Compliant with USB HID</td></tr> <tr> <td>Size</td><td>Electronics 9.4 x 2.7 x 2.7 cms</td></tr> <tr> <td>Weight</td><td>Electronics 39 grams/1.4 ounces</td></tr> <tr> <td>Cable</td><td>3 meters (series A USB cable)</td></tr> <tr> <td>Power</td><td>5 volts via USB</td></tr> <tr> <td>Power Requirements</td><td>350 mw</td></tr> </table> <p><small>Playstation2 is a trademark of Sony Computer Entertainment Inc. Specifications subject to change.</small></p> </div> <p>InterTrax 2 Brochure.</p> <p><i>See</i> Disclosures with respect to Claim 15, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>	Degrees of Freedom	3 (Yaw, Pitch, and Roll)	Angular Range	Pitch ±80° Yaw ±180° Roll ±90°	Maximum Angular Rate	±720° yaw, pitch elevation, ±360° roll	Minimum Angular Rate	3° per second	Internal Update Rate	256 Hz	Internal Latency	4 milliseconds	Angular Resolution	0.02° relative	O/S Compatibility	Win98/2000	H/W Compatibility	PC, Workstations, Sony Playstation2™	Interface	USB or Serial RS-232	Protocol	Compliant with USB HID	Size	Electronics 9.4 x 2.7 x 2.7 cms	Weight	Electronics 39 grams/1.4 ounces	Cable	3 meters (series A USB cable)	Power	5 volts via USB	Power Requirements	350 mw
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Power Requirements	350 mw																																

Exhibit A-19

Q. DEPENDENT CLAIM 24

CLAIM 24	InterTrax and InterTrax 2
[24] The method of claim 23, wherein the first object is a window, icon or menu in the graphical user interface.	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, the method of claim 23, wherein the first object is a window, icon or menu in the graphical user interface. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See</i> Disclosures with respect to Claim 23, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>

R. DEPENDENT CLAIM 25

CLAIM 25	InterTrax and InterTrax 2
[25] The method of claim 23, wherein the first object is a pointer for the graphical user interface.	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, the method of claim 23, wherein the first object is a pointer for the graphical user interface. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See, e.g.:</i></p>

Exhibit A-19

CLAIM 25	InterTrax and InterTrax 2
	<div> </div> <div> </div> <p>InterTrax 2 Brochure.</p>

Exhibit A-19

CLAIM 25	InterTrax and InterTrax 2																																
	<div style="border: 1px solid black; padding: 10px;"> <p style="text-align: center;">INTERTRAX² SPECIFICATIONS:</p> <table> <tr> <td>Degrees of Freedom</td><td>3 (Yaw, Pitch, and Roll)</td></tr> <tr> <td>Angular Range</td><td>Pitch ±80° Yaw ±180° Roll ±90°</td></tr> <tr> <td>Maximum Angular Rate</td><td>±720° yaw, pitch elevation, ±360° roll</td></tr> <tr> <td>Minimum Angular Rate</td><td>3° per second</td></tr> <tr> <td>Internal Update Rate</td><td>256 Hz</td></tr> <tr> <td>Internal Latency</td><td>4 milliseconds</td></tr> <tr> <td>Angular Resolution</td><td>0.02° relative</td></tr> <tr> <td>O/S Compatibility</td><td>Win98/2000</td></tr> <tr> <td>H/W Compatibility</td><td>PC, Workstations, Sony Playstation2™</td></tr> <tr> <td>Interface</td><td>USB or Serial RS-232</td></tr> <tr> <td>Protocol</td><td>Compliant with USB HID</td></tr> <tr> <td>Size</td><td>Electronics 9.4 x 2.7 x 2.7 cms</td></tr> <tr> <td>Weight</td><td>Electronics 39 grams/1.4 ounces</td></tr> <tr> <td>Cable</td><td>3 meters (series A USB cable)</td></tr> <tr> <td>Power</td><td>5 volts via USB</td></tr> <tr> <td>Power Requirements</td><td>350 mw</td></tr> </table> <p><small>Playstation2 is a trademark of Sony Computer Entertainment Inc. Specifications subject to change.</small></p> </div> <p>InterTrax 2 Brochure.</p> <p><i>See</i> Disclosures with respect to Claim 23, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>	Degrees of Freedom	3 (Yaw, Pitch, and Roll)	Angular Range	Pitch ±80° Yaw ±180° Roll ±90°	Maximum Angular Rate	±720° yaw, pitch elevation, ±360° roll	Minimum Angular Rate	3° per second	Internal Update Rate	256 Hz	Internal Latency	4 milliseconds	Angular Resolution	0.02° relative	O/S Compatibility	Win98/2000	H/W Compatibility	PC, Workstations, Sony Playstation2™	Interface	USB or Serial RS-232	Protocol	Compliant with USB HID	Size	Electronics 9.4 x 2.7 x 2.7 cms	Weight	Electronics 39 grams/1.4 ounces	Cable	3 meters (series A USB cable)	Power	5 volts via USB	Power Requirements	350 mw
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Exhibit A-19

S. DEPENDENT CLAIM 26

CLAIM 26	InterTrax and InterTrax 2
<p>[26] The method of claim 16, further comprising:</p> <p>changing the position of the first localized feature relative to the position tracker; and</p> <p>after changing the position of the first localized feature, redisplaying the first object at a second position on the display device determined based on the change in the position of the first localized feature.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, the method of claim 16, further comprising changing the position of the first localized feature relative to the position tracker, and after changing the position of the first localized feature, redisplaying the first object at a second position on the display device determined based on the change in the position of the first localized feature. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See, e.g.:</i></p> <div> </div> <div> </div> <p>InterTrax 2 Brochure.</p>

Exhibit A-19

CLAIM 26	InterTrax and InterTrax 2																																
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Exhibit A-19

CLAIM 26	InterTrax and InterTrax 2
	<p>InterSense Introduces the InterTrax™ Motion Tracker and Expects to Expand the Use of Virtual Environments</p> <p>The InterTrax motion tracker will bring virtual environments to the professional and high-end consumer marketplace beginning with a virtual fitness trainer</p> <p>Orlando, FL –July 20, 1998 – InterSense (Booth #1317), the leading developer and supplier of motion-tracking systems for human interaction with virtual environments and 3D graphics, today introduced the InterTrax™ 20 and 30 precision motion trackers. Using InterSense’s exclusive inertial tracking technology and algorithms, InterTrax relieves the jitter and complex set-up normally associated with virtual environments to create smooth, realistic 3D experiences that can easily be installed on any PC. A low price point and high performance make this tracker suitable for high-end consumers and professionals. Later this summer, InterTrax will be integrated with the Sony GlassTron™ and StairMaster FreeRunner™ to bring virtual environments to consumers in a virtual reality fitness trainer.</p> <p>InterSense July 20, 1998 Press Release.</p> <p>See Disclosures with respect to Claim 16, <i>supra</i>; see also Defendants’ Invalidity Contentions for further discussion.</p>

T. DEPENDENT CLAIM 27

CLAIM 27	InterTrax and InterTrax 2
[27] The method of claim 26, further comprising:	<p>At least under Plaintiffs’ apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, the method of claim 26 further comprising displaying a second object on the display device, wherein after changing the position of the first localized feature, the displayed position of the second object on the display device does not change in response to the change in the position of the first localized feature. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants’ Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p>

Exhibit A-19

CLAIM 27	InterTrax and InterTrax 2
<p>displaying a second object on the display device, wherein</p> <p>after changing the position of the first localized feature, the displayed position of the second object on the display device does not change in response to the change in the position of the first localized feature.</p>	<p><i>See, e.g.:</i></p> <div> </div> <div> </div> <p>InterTrax 2 Brochure.</p>

Exhibit A-19

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CLAIM 27	InterTrax and InterTrax 2
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U. DEPENDENT CLAIM 28

CLAIM 28	InterTrax and InterTrax 2
<p>[28] The method of claim 26, wherein the second position is determined so as to make the position of the first object appear to coincide with the position of the</p>	<p>At least under Plaintiffs’ apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, the method of claim 26, wherein the second position is determined so as to make the position of the first object appear to coincide with the position of the first localized feature as seen or felt by the user. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants’ Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p>

Exhibit A-19

CLAIM 28	InterTrax and InterTrax 2
first localized feature as seen or felt by the user.	<p><i>See, e.g.:</i></p> <div>  </div> <div>  </div> <p>InterTrax 2 Brochure.</p>

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CLAIM 28	InterTrax and InterTrax 2																																								
	<div> <table> <tr> <th>INTERTRAX²</th><th>SPECIFICATIONS:</th></tr> <tr> <td>Degrees of Freedom</td><td>3 (Yaw, Pitch, and Roll)</td></tr> <tr> <td>Angular Range</td><td>Pitch ±80°</td></tr> <tr> <td></td><td>Yaw ±180°</td></tr> <tr> <td></td><td>Roll ±90°</td></tr> <tr> <td>Maximum Angular Rate</td><td>±720° yaw, pitch elevation, ±360° roll</td></tr> <tr> <td>Minimum Angular Rate</td><td>3° per second</td></tr> <tr> <td>Internal Update Rate</td><td>256 Hz</td></tr> <tr> <td>Internal Latency</td><td>4 milliseconds</td></tr> <tr> <td>Angular Resolution</td><td>0.02° relative</td></tr> <tr> <td>O/S Compatibility</td><td>Win98/2000</td></tr> <tr> <td>H/W Compatibility</td><td>PC, Workstations, Sony Playstation2™</td></tr> <tr> <td>Interface</td><td>USB or Serial RS-232</td></tr> <tr> <td>Protocol</td><td>Compliant with USB HID</td></tr> <tr> <td>Size</td><td>Electronics 9.4 x 2.7 x 2.7 cms</td></tr> <tr> <td>Weight</td><td>Electronics 39 grams/1.4 ounces</td></tr> <tr> <td>Cable</td><td>3 meters (series A USB cable)</td></tr> <tr> <td>Power</td><td>5 volts via USB</td></tr> <tr> <td>Power Requirements</td><td>350 mw</td></tr> <tr> <td colspan="2"> <i>Playstation2 is a trademark of Sony Computer Entertainment Inc. Specifications subject to change.</i> </td></tr> </table> </div> <p>InterTrax 2 Brochure.</p> <p><i>See</i> Disclosures with respect to Claim 26, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>	INTERTRAX ²	SPECIFICATIONS:	Degrees of Freedom	3 (Yaw, Pitch, and Roll)	Angular Range	Pitch ±80°		Yaw ±180°		Roll ±90°	Maximum Angular Rate	±720° yaw, pitch elevation, ±360° roll	Minimum Angular Rate	3° per second	Internal Update Rate	256 Hz	Internal Latency	4 milliseconds	Angular Resolution	0.02° relative	O/S Compatibility	Win98/2000	H/W Compatibility	PC, Workstations, Sony Playstation2™	Interface	USB or Serial RS-232	Protocol	Compliant with USB HID	Size	Electronics 9.4 x 2.7 x 2.7 cms	Weight	Electronics 39 grams/1.4 ounces	Cable	3 meters (series A USB cable)	Power	5 volts via USB	Power Requirements	350 mw	<i>Playstation2 is a trademark of Sony Computer Entertainment Inc. Specifications subject to change.</i>	
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Exhibit A-19

V. DEPENDENT CLAIM 29

CLAIM 29	InterTrax and InterTrax 2
<p>[29] The method of claim 17, further comprising:</p> <p>changing the orientation of the first coordinate reference frame in response to a signal being received by the computer.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, the method of claim 17, further comprising changing the orientation of the first coordinate reference frame in response to a signal being received by the computer. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See, e.g.:</i></p> <div> </div> <div> </div> <p>InterTrax 2 Brochure.</p>

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CLAIM 29	InterTrax and InterTrax 2
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CLAIM 29	InterTrax and InterTrax 2
	<p>GlassTron™ personal display and into StairMaster's FreeRunner™ to create the first widely deployed virtual environment physical fitness training system. Exercisers will be able to work out in complete freedom while enjoying a computer-generated environments for fun, fitness, or competition. Lunar landscapes and more earthly environments, such as the Boston Marathon, have already been created. Eventually, fitness centers will be able to network multiple machines in the same club or across the country via the Internet and challenge other athletes to "virtual" competitions.</p> <p>InterSense July 20, 1998 Press Release.</p> <p>More than any other motion tracker on the market, InterTrax offers high performance and ease of use, there is no source to set up and no configuration software required. The unit comes with an ergonomic curved adapter plate which attaches with Velcro onto the back of any head-mounted display. InterTrax plugs directly into a PC serial port without a separate electronics processing box, and has a single button conveniently accessible on the back for resetting the orientation at the start of a session. The tracker can be used in mouse emulation mode for instant compatibility with many 3D applications, or, for improved performance, can be used in native mode via a simplified protocol allowing for rapid integration by software developers.</p> <p>InterSense July 20, 1998 Press Release.</p>

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CLAIM 29	InterTrax and InterTrax 2
	<p>Currently available for shipping, InterTrax requires a single standard RS-232 connection and can be used across virtually all host platforms, including DOS, Windows 95/NT, Windows 98/NT, MAC, Sun, UNIX, and SGI. The tracker will work in mouse emulation mode with any type of serial mouse, including Logitech and Microsoft. Additionally, mouse emulation can be used without additional software under DOS and Windows. The InterTrax 20 is available for \$795 and the InterTrax 30 is available for \$995. For more information, customers can call InterSense at 1-888-359-8478. About InterSense InterSense's motion-tracking technology measures the 3D motion of a person's head, hands, and body while allowing unconstricted movement through a virtual world. Using inertial and ultrasonic tracking, InterSense's trackers relieve the lag and jitter normally associated with virtual environments. These changes aren't cosmetic, they are</p> <p>InterSense July 20, 1998 Press Release.</p> <p>Sony and InterSense Join Forces to Supply Tracked Personal Display Systems to the Real-Time 3D Computing Market</p> <p>Burlington, Mass. - July 13, 1999 - Sony Broadcast & Professional Europe has joined forces with InterSense Inc., the leading provider of precision motion tracking systems, to provide professional users of 3D graphics with the first affordable, high performance system for exploring and interacting with real-time computer generated environments.</p> <p>InterSense and its international distribution partners will supply the full range of Sony Glasstron LDI series personal display systems bundled with the InterTraxÔ inertial tracking system. The system provides an integrated solution that allows users to view and walk through standard 3D environments in real time. This bundled product offering is compatible with a wide range of 3D software toolkits and most 3D PC software. With prices ranging from \$1,750, it is also priced to appeal to a new generation of 3D software users who were previously unable to take advantage of the benefits of visual simulation.</p>

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CLAIM 29	InterTrax and InterTrax 2
	<p>InterSense July 13, 1999 Press Release.</p> <p>Launched in July 1998, the InterTrax has already been widely adopted in such diverse application sectors as architecture, education, entertainment, interior design, marketing and research. InterSense sells its products to major corporations and leading research facilities worldwide. Its recently formed InterTrax business unit supplies affordable headsets and tracking systems to professional, entertainment, engineering and industrial markets through an international distribution network. With an increasing range of compatible software available, traditional users of CAD products can easily transition to real time visualization.</p> <p>InterSense July 13, 1999 Press Release.</p> <p>See Disclosures with respect to Claim 17, <i>supra</i>; see also Defendants' Invalidity Contentions for further discussion.</p>

W. DEPENDENT CLAIM 30

CLAIM 30	InterTrax and InterTrax 2
<p>[30] The method of claim 29, wherein the orientation of the first coordinate reference frame is changed in response to a change in the position of the first localized feature.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, the method of claim 29, wherein the orientation of the first coordinate reference frame is changed in response to a change in the position of the first localized feature. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p>See Disclosures with respect to Claim 29, <i>supra</i>; see also Defendants' Invalidity Contentions for further discussion.</p>

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X. DEPENDENT CLAIM 31

CLAIM 31	InterTrax and InterTrax 2
[31] The method of claim 29, wherein the orientation of the first coordinate reference frame is changed in response to a signal representative of the location of the user.	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, the method of claim 29, wherein the orientation of the first coordinate reference frame is changed in response to a signal representative of the location of the user. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See</i> Disclosures with respect to Claim 29, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>

Y. DEPENDENT CLAIM 32

CLAIM 32	InterTrax and InterTrax 2
[32] The method of claim 29, wherein the orientation of the first coordinate reference frame is changed in response to a signal representative of a destination.	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, the method of claim 29, wherein the orientation of the first coordinate reference frame is changed in response to a signal representative of a destination. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See</i> Disclosures with respect to Claim 29, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>

Z. DEPENDENT CLAIM 33

CLAIM 33	InterTrax and InterTrax 2
[33] The method of claim 29, wherein the orientation of the first coordinate reference	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, method of claim 29, wherein the orientation of the first coordinate reference frame is changed in response to a signal representative of a change in the user's immediate surroundings. In the alternative, this</p>

Exhibit A-19

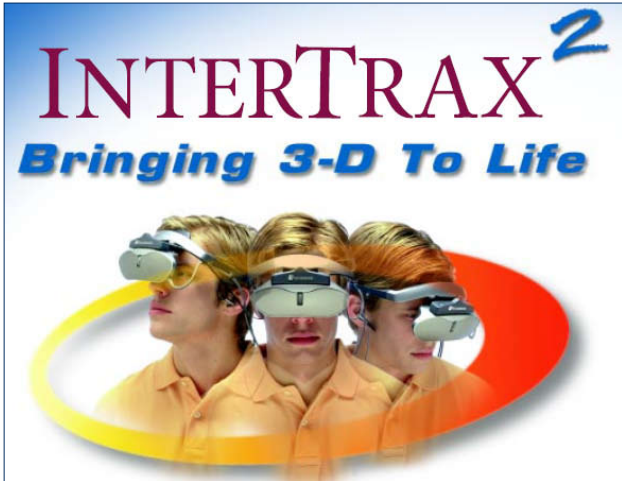

CLAIM 33	InterTrax and InterTrax 2
<p>frame is changed in response to a signal representative of a change in the user's immediate surroundings.</p>	<p>element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See, e.g.:</i></p> <div>  <p>The brochure for InterTrax 2 features the title 'INTERTRAX² Bringing 3-D To Life' in a stylized font. Below the title is a photograph of three young men wearing head-mounted displays (HMDs) and headsets, looking forward. The background of the photo is a gradient of yellow and orange.</p> </div> <div> <ul style="list-style-type: none"> ■ Next generation of the world's best-selling tracker ■ Increased functionality and accuracy ■ Priced for consumers, performance for professionals ■ Available standalone or bundled with headsets ■ Simple connection to all personal display devices ■ Available with USB or Serial Interface ■ Compatible with Playstation2, PCs and workstations ■ USB middleware and SDK available <p>The Smallest High Performance</p>  <p>Head Tracker in the World</p> <p>INTERSENSE www.isense.com</p> </div> <p>InterTrax 2 Brochure.</p>

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CLAIM 33	InterTrax and InterTrax 2
	<div> </div> <div> </div> <p>InterTrax 2 Brochure.</p>

Exhibit A-19

CLAIM 33	InterTrax and InterTrax 2																																
	<div> <p>INTERTRAX² SPECIFICATIONS:</p> <table> <tr> <td>Degrees of Freedom</td><td>3 (Yaw, Pitch, and Roll)</td></tr> <tr> <td>Angular Range</td><td>Pitch ±80° Yaw ±180° Roll ±90°</td></tr> <tr> <td>Maximum Angular Rate</td><td>±720° yaw, pitch elevation, ±360° roll</td></tr> <tr> <td>Minimum Angular Rate</td><td>3° per second</td></tr> <tr> <td>Internal Update Rate</td><td>256 Hz</td></tr> <tr> <td>Internal Latency</td><td>4 milliseconds</td></tr> <tr> <td>Angular Resolution</td><td>0.02° relative</td></tr> <tr> <td>O/S Compatibility</td><td>Win98/2000</td></tr> <tr> <td>H/W Compatibility</td><td>PC, Workstations, Sony Playstation2™</td></tr> <tr> <td>Interface</td><td>USB or Serial RS-232</td></tr> <tr> <td>Protocol</td><td>Compliant with USB HID</td></tr> <tr> <td>Size</td><td>Electronics 9.4 x 2.7 x 2.7 cms</td></tr> <tr> <td>Weight</td><td>Electronics 39 grams/1.4 ounces</td></tr> <tr> <td>Cable</td><td>3 meters (series A USB cable)</td></tr> <tr> <td>Power</td><td>5 volts via USB</td></tr> <tr> <td>Power Requirements</td><td>350 mw</td></tr> </table> <p><i>Playstation2 is a trademark of Sony Computer Entertainment Inc. Specifications subject to change.</i></p> </div> <p>InterTrax 2 Brochure.</p>	Degrees of Freedom	3 (Yaw, Pitch, and Roll)	Angular Range	Pitch ±80° Yaw ±180° Roll ±90°	Maximum Angular Rate	±720° yaw, pitch elevation, ±360° roll	Minimum Angular Rate	3° per second	Internal Update Rate	256 Hz	Internal Latency	4 milliseconds	Angular Resolution	0.02° relative	O/S Compatibility	Win98/2000	H/W Compatibility	PC, Workstations, Sony Playstation2™	Interface	USB or Serial RS-232	Protocol	Compliant with USB HID	Size	Electronics 9.4 x 2.7 x 2.7 cms	Weight	Electronics 39 grams/1.4 ounces	Cable	3 meters (series A USB cable)	Power	5 volts via USB	Power Requirements	350 mw
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CLAIM 33	InterTrax and InterTrax 2
	<p>InterSense Introduces the InterTrax™ Motion Tracker and Expects to Expand the Use of Virtual Environments</p> <p>The InterTrax motion tracker will bring virtual environments to the professional and high-end consumer marketplace beginning with a virtual fitness trainer</p> <p>Orlando, FL –July 20, 1998 – InterSense (Booth #1317), the leading developer and supplier of motion-tracking systems for human interaction with virtual environments and 3D graphics, today introduced the InterTrax™ 20 and 30 precision motion trackers. Using InterSense's exclusive inertial tracking technology and algorithms, InterTrax relieves the jitter and complex set-up normally associated with virtual environments to create smooth, realistic 3D experiences that can easily be installed on any PC. A low price point and high performance make this tracker suitable for high-end consumers and professionals. Later this summer, InterTrax will be integrated with the Sony GlassTron™ and StairMaster FreeRunner™ to bring virtual environments to consumers in a virtual reality fitness trainer.</p> <p>InterSense July 20, 1998 Press Release.</p> <p>"InterSense has been recognized in the industry as the leading developer and manufacturer of motion-tracking technologies," said Charlie Miller, InterSense CEO. "With our flagship inertial and ultrasonic trackers, the IS-300 and IS-600, we were able to make virtual environments viable business solutions. Now, with our new line of motion trackers, the InterTrax 20 and 30, both at a lower price point, we can make the benefits of our sourceless inertial tracking technology available to an even broader professional and consumer market. With InterTrax, there is no disorienting slosh and jitter because it is based on InterSense's patented drift-corrected gyroscopic technology. With InterTrax, our goal at InterSense is to make virtual environments part of everyday life."</p> <p>InterSense July 20, 1998 Press Release.</p> <p>InterSense will take the first step in bringing virtual environments to the professional and consumer marketplace when InterTrax is incorporated with Sony's</p>

Exhibit A-19

CLAIM 33	InterTrax and InterTrax 2
	<p>GlassTron™ personal display and into StairMaster's FreeRunner™ to create the first widely deployed virtual environment physical fitness training system. Exercisers will be able to work out in complete freedom while enjoying a computer-generated environments for fun, fitness, or competition. Lunar landscapes and more earthly environments, such as the Boston Marathon, have already been created. Eventually, fitness centers will be able to network multiple machines in the same club or across the country via the Internet and challenge other athletes to "virtual" competitions.</p> <p>InterSense July 20, 1998 Press Release.</p> <p>More than any other motion tracker on the market, InterTrax offers high performance and ease of use, there is no source to set up and no configuration software required. The unit comes with an ergonomic curved adapter plate which attaches with Velcro onto the back of any head-mounted display. InterTrax plugs directly into a PC serial port without a separate electronics processing box, and has a single button conveniently accessible on the back for resetting the orientation at the start of a session. The tracker can be used in mouse emulation mode for instant compatibility with many 3D applications, or, for improved performance, can be used in native mode via a simplified protocol allowing for rapid integration by software developers.</p> <p>InterSense July 20, 1998 Press Release.</p>

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CLAIM 33	InterTrax and InterTrax 2
	<p>Currently available for shipping, InterTrax requires a single standard RS-232 connection and can be used across virtually all host platforms, including DOS, Windows 95/NT, Windows 98/NT, MAC, Sun, UNIX, and SGI. The tracker will work in mouse emulation mode with any type of serial mouse, including Logitech and Microsoft. Additionally, mouse emulation can be used without additional software under DOS and Windows. The InterTrax 20 is available for \$795 and the InterTrax 30 is available for \$995. For more information, customers can call InterSense at 1-888-359-8478. About InterSense InterSense's motion-tracking technology measures the 3D motion of a person's head, hands, and body while allowing unconstricted movement through a virtual world. Using inertial and ultrasonic tracking, InterSense's trackers relieve the lag and jitter normally associated with virtual environments. These changes aren't cosmetic, they are</p> <p>InterSense July 20, 1998 Press Release.</p> <p>Sony and InterSense Join Forces to Supply Tracked Personal Display Systems to the Real-Time 3D Computing Market</p> <p>Burlington, Mass. - July 13, 1999 - Sony Broadcast & Professional Europe has joined forces with InterSense Inc., the leading provider of precision motion tracking systems, to provide professional users of 3D graphics with the first affordable, high performance system for exploring and interacting with real-time computer generated environments.</p> <p>InterSense and its international distribution partners will supply the full range of Sony Glasstron LDI series personal display systems bundled with the InterTraxÔ inertial tracking system. The system provides an integrated solution that allows users to view and walk through standard 3D environments in real time. This bundled product offering is compatible with a wide range of 3D software toolkits and most 3D PC software. With prices ranging from \$1,750, it is also priced to appeal to a new generation of 3D software users who were previously unable to take advantage of the benefits of visual simulation.</p>

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CLAIM 33	InterTrax and InterTrax 2
	<p>InterSense July 13, 1999 Press Release.</p> <p>Launched in July 1998, the InterTrax has already been widely adopted in such diverse application sectors as architecture, education, entertainment, interior design, marketing and research. InterSense sells its products to major corporations and leading research facilities worldwide. Its recently formed InterTrax business unit supplies affordable headsets and tracking systems to professional, entertainment, engineering and industrial markets through an international distribution network. With an increasing range of compatible software available, traditional users of CAD products can easily transition to real time visualization.</p> <p>InterSense July 13, 1999 Press Release.</p> <p>See Disclosures with respect to Claim 29, <i>supra</i>; see also Defendants' Invalidity Contentions for further discussion.</p>

AA. DEPENDENT CLAIM 35

CLAIM 35	InterTrax and InterTrax 2
<p>[35] The method of claim 27, wherein redisplaying the first object further comprises changing the apparent size of the first object according to the change in position of the first localized feature.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, the method of claim 27, wherein redisplaying the first object further comprises changing the apparent size of the first object according to the change in position of the first localized feature. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p>See Disclosures with respect to Claim 27, <i>supra</i>; see also Defendants' Invalidity Contentions for further discussion.</p>

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BB. DEPENDENT CLAIM 41

CLAIM 41	InterTrax and InterTrax 2
<p>[41] The method of claim 16, further comprising:</p> <p>displaying the first object at a third position;</p> <p>after displaying the first object at the third position, changing the orientation of the display; and</p> <p>after changing the orientation of the display, continuing to display the first object at the third position.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, the method of claim 16, further comprising displaying the first object at a third position, after displaying the first object at the third position, changing the orientation of the display, and after changing the orientation of the display, continuing to display the first object at the third position. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See</i> Disclosures with respect to Claim 16, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>

CC. DEPENDENT CLAIM 45

CLAIM 45	InterTrax and InterTrax 2
<p>[45] The method of claim 1, further comprising:</p> <p>positioning the first localized feature at a first point;</p>	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, the method of claim 1, further comprising positioning the first localized feature at a first point, positioning the first localized feature at a second point, and calculating the distance between the first point and the second point. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p>

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CLAIM 45	InterTrax and InterTrax 2
<p>positioning the first localized feature at a second point; and</p> <p>calculating the distance between the first point and the second point.</p>	<p><i>See</i> Disclosures with respect to Claim 1, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>

DD. DEPENDENT CLAIM 46

CLAIM 46	InterTrax and InterTrax 2
<p>[46] The method of claim 1, further comprising:</p> <p>determining a position vector of the first localized feature relative to a second localized feature associated with the user's head; and</p> <p>transforming the position vector based on an orientation of the user's head.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, the method of claim 1, further comprising determining a position vector of the first localized feature relative to a second localized feature associated with the user's head, and transforming the position vector based on an orientation of the user's head. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See</i> Disclosures with respect to Claim 1, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>

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EE. DEPENDENT CLAIM 47

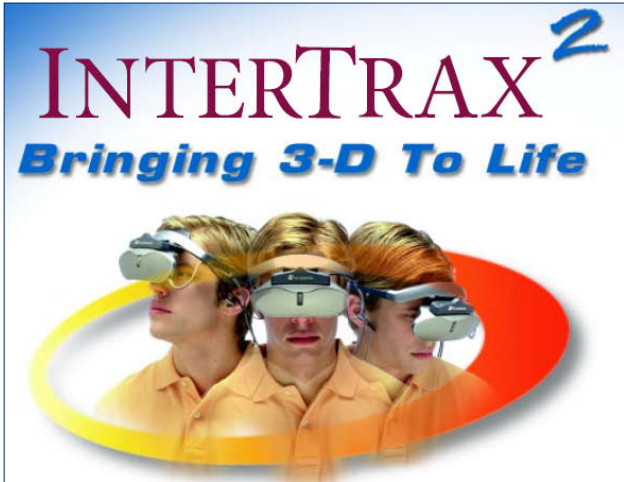

CLAIM 47	InterTrax and InterTrax 2
<p>[47] The method of claim 46, further comprising:</p> <p>setting an assumed position for the user's head in a coordinate system; and</p> <p>setting a position for the first localized feature in the coordinate system based on the assumed position of the user's head and said position vector.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, the method of claim 46, further comprising setting an assumed position for the user's head in a coordinate system, and setting a position for the first localized feature in the coordinate system based on the assumed position of the user's head and said position vector. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See, e.g.:</i></p> <div>  </div> <div> <ul style="list-style-type: none"> ■ Next generation of the world's best-selling tracker ■ Increased functionality and accuracy ■ Priced for consumers, performance for professionals ■ Available standalone or bundled with headsets ■ Simple connection to all personal display devices ■ Available with USB or Serial Interface ■ Compatible with Playstation2, PCs and workstations ■ USB middleware and SDK available <div> <p>The Smallest High Performance</p>  <p>Head Tracker in the World</p> <p>INTERSENSE</p> <p>www.isense.com</p> </div> </div> <p>InterTrax 2 Brochure.</p>

Exhibit A-19

CLAIM 47	InterTrax and InterTrax 2
	<div></div> <div></div> <p>InterTrax 2 Brochure.</p>

Exhibit A-19

CLAIM 47	InterTrax and InterTrax 2																																
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CLAIM 47	InterTrax and InterTrax 2
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	<p>GlassTron™ personal display and into StairMaster's FreeRunner™ to create the first widely deployed virtual environment physical fitness training system. Exercisers will be able to work out in complete freedom while enjoying a computer-generated environments for fun, fitness, or competition. Lunar landscapes and more earthly environments, such as the Boston Marathon, have already been created. Eventually, fitness centers will be able to network multiple machines in the same club or across the country via the Internet and challenge other athletes to "virtual" competitions.</p> <p>InterSense July 20, 1998 Press Release.</p> <p>More than any other motion tracker on the market, InterTrax offers high performance and ease of use, there is no source to set up and no configuration software required. The unit comes with an ergonomic curved adapter plate which attaches with Velcro onto the back of any head-mounted display. InterTrax plugs directly into a PC serial port without a separate electronics processing box, and has a single button conveniently accessible on the back for resetting the orientation at the start of a session. The tracker can be used in mouse emulation mode for instant compatibility with many 3D applications, or, for improved performance, can be used in native mode via a simplified protocol allowing for rapid integration by software developers.</p> <p>InterSense July 20, 1998 Press Release.</p>

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CLAIM 47	InterTrax and InterTrax 2
	<p>Currently available for shipping, InterTrax requires a single standard RS-232 connection and can be used across virtually all host platforms, including DOS, Windows 95/NT, Windows 98/NT, MAC, Sun, UNIX, and SGI. The tracker will work in mouse emulation mode with any type of serial mouse, including Logitech and Microsoft. Additionally, mouse emulation can be used without additional software under DOS and Windows. The InterTrax 20 is available for \$795 and the InterTrax 30 is available for \$995. For more information, customers can call InterSense at 1-888-359-8478. About InterSense InterSense's motion-tracking technology measures the 3D motion of a person's head, hands, and body while allowing unconstricted movement through a virtual world. Using inertial and ultrasonic tracking, InterSense's trackers relieve the lag and jitter normally associated with virtual environments. These changes aren't cosmetic, they are</p> <p>InterSense July 20, 1998 Press Release.</p> <p>Sony and InterSense Join Forces to Supply Tracked Personal Display Systems to the Real-Time 3D Computing Market</p> <p>Burlington, Mass. - July 13, 1999 - Sony Broadcast & Professional Europe has joined forces with InterSense Inc., the leading provider of precision motion tracking systems, to provide professional users of 3D graphics with the first affordable, high performance system for exploring and interacting with real-time computer generated environments.</p> <p>InterSense and its international distribution partners will supply the full range of Sony Glasstron LDI series personal display systems bundled with the InterTraxÔ inertial tracking system. The system provides an integrated solution that allows users to view and walk through standard 3D environments in real time. This bundled product offering is compatible with a wide range of 3D software toolkits and most 3D PC software. With prices ranging from \$1,750, it is also priced to appeal to a new generation of 3D software users who were previously unable to take advantage of the benefits of visual simulation.</p>

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FF.DEPENDENT CLAIM 48

CLAIM 48	InterTrax and InterTrax 2
<p>[48] The method of claim 47, where setting a position for the first localized feature further comprises:</p> <p>measuring the orientation of the user's head relative to a fixed frame of reference.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, the method of claim 47, where setting a position for the first localized feature further comprises measuring the orientation of the user's head relative to a fixed frame of reference. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p>See Disclosures with respect to Claim 47, <i>supra</i>; see also Defendants' Invalidity Contentions for further discussion.</p>

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GG. DEPENDENT CLAIM 50

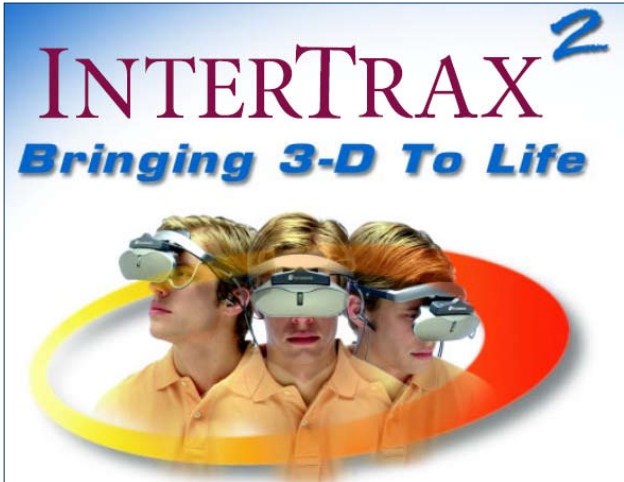

CLAIM 50	InterTrax and InterTrax 2
<p>[50] The method of claim 1, wherein the sourceless orientation tracker comprises a first inertial sensor, and further comprising:</p> <p>mounting a second inertial sensor elsewhere on the user's body or in an object held by the user; and</p> <p>tracking the position of one inertial sensor relative to the other.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, the method of claim 1, wherein the sourceless orientation tracker comprises a first inertial sensor, and further comprising mounting a second inertial sensor elsewhere on the user's body or in an object held by the user, and tracking the position of one inertial sensor relative to the other. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See, e.g.:</i></p> <div>  </div> <div> <ul style="list-style-type: none"> ■ Next generation of the world's best-selling tracker ■ Increased functionality and accuracy ■ Priced for consumers, performance for professionals ■ Available standalone or bundled with headsets ■ Simple connection to all personal display devices ■ Available with USB or Serial Interface ■ Compatible with Playstation2, PCs and workstations ■ USB middleware and SDK available <div> <p>The Smallest High Performance</p>  <p>Head Tracker in the World</p> <p>INTERSENSE</p> <p>www.isense.com</p> </div> </div> <p>InterTrax 2 Brochure.</p>

Exhibit A-19

CLAIM 50	InterTrax and InterTrax 2
	<div></div> <div></div> <p>InterTrax 2 Brochure.</p>

Exhibit A-19

CLAIM 50	InterTrax and InterTrax 2																																
	<div> <p>INTERTRAX² SPECIFICATIONS:</p> <table> <tr> <td>Degrees of Freedom</td><td>3 (Yaw, Pitch, and Roll)</td></tr> <tr> <td>Angular Range</td><td>Pitch ±80° Yaw ±180° Roll ±90°</td></tr> <tr> <td>Maximum Angular Rate</td><td>±720° yaw, pitch elevation, ±360° roll</td></tr> <tr> <td>Minimum Angular Rate</td><td>3° per second</td></tr> <tr> <td>Internal Update Rate</td><td>256 Hz</td></tr> <tr> <td>Internal Latency</td><td>4 milliseconds</td></tr> <tr> <td>Angular Resolution</td><td>0.02° relative</td></tr> <tr> <td>O/S Compatibility</td><td>Win98/2000</td></tr> <tr> <td>H/W Compatibility</td><td>PC, Workstations, Sony Playstation2™</td></tr> <tr> <td>Interface</td><td>USB or Serial RS-232</td></tr> <tr> <td>Protocol</td><td>Compliant with USB HID</td></tr> <tr> <td>Size</td><td>Electronics 9.4 x 2.7 x 2.7 cms</td></tr> <tr> <td>Weight</td><td>Electronics 39 grams/1.4 ounces</td></tr> <tr> <td>Cable</td><td>3 meters (series A USB cable)</td></tr> <tr> <td>Power</td><td>5 volts via USB</td></tr> <tr> <td>Power Requirements</td><td>350 mw</td></tr> </table> <p><i>Playstation2 is a trademark of Sony Computer Entertainment Inc. Specifications subject to change.</i></p> </div> <p>InterTrax 2 Brochure.</p>	Degrees of Freedom	3 (Yaw, Pitch, and Roll)	Angular Range	Pitch ±80° Yaw ±180° Roll ±90°	Maximum Angular Rate	±720° yaw, pitch elevation, ±360° roll	Minimum Angular Rate	3° per second	Internal Update Rate	256 Hz	Internal Latency	4 milliseconds	Angular Resolution	0.02° relative	O/S Compatibility	Win98/2000	H/W Compatibility	PC, Workstations, Sony Playstation2™	Interface	USB or Serial RS-232	Protocol	Compliant with USB HID	Size	Electronics 9.4 x 2.7 x 2.7 cms	Weight	Electronics 39 grams/1.4 ounces	Cable	3 meters (series A USB cable)	Power	5 volts via USB	Power Requirements	350 mw
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CLAIM 50	InterTrax and InterTrax 2
	<p>InterSense Introduces the InterTrax™ Motion Tracker and Expects to Expand the Use of Virtual Environments</p> <p>The InterTrax motion tracker will bring virtual environments to the professional and high-end consumer marketplace beginning with a virtual fitness trainer</p> <p>Orlando, FL –July 20, 1998 – InterSense (Booth #1317), the leading developer and supplier of motion-tracking systems for human interaction with virtual environments and 3D graphics, today introduced the InterTrax™ 20 and 30 precision motion trackers. Using InterSense's exclusive inertial tracking technology and algorithms, InterTrax relieves the jitter and complex set-up normally associated with virtual environments to create smooth, realistic 3D experiences that can easily be installed on any PC. A low price point and high performance make this tracker suitable for high-end consumers and professionals. Later this summer, InterTrax will be integrated with the Sony GlassTron™ and StairMaster FreeRunner™ to bring virtual environments to consumers in a virtual reality fitness trainer.</p> <p>InterSense July 20, 1998 Press Release.</p> <p>"InterSense has been recognized in the industry as the leading developer and manufacturer of motion-tracking technologies," said Charlie Miller, InterSense CEO. "With our flagship inertial and ultrasonic trackers, the IS-300 and IS-600, we were able to make virtual environments viable business solutions. Now, with our new line of motion trackers, the InterTrax 20 and 30, both at a lower price point, we can make the benefits of our sourceless inertial tracking technology available to an even broader professional and consumer market. With InterTrax, there is no disorienting slosh and jitter because it is based on InterSense's patented drift-corrected gyroscopic technology. With InterTrax, our goal at InterSense is to make virtual environments part of everyday life."</p> <p>InterSense July 20, 1998 Press Release.</p> <p>InterSense will take the first step in bringing virtual environments to the professional and consumer marketplace when InterTrax is incorporated with Sony's</p>

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	<p>GlassTron™ personal display and into StairMaster's FreeRunner™ to create the first widely deployed virtual environment physical fitness training system. Exercisers will be able to work out in complete freedom while enjoying a computer-generated environments for fun, fitness, or competition. Lunar landscapes and more earthly environments, such as the Boston Marathon, have already been created. Eventually, fitness centers will be able to network multiple machines in the same club or across the country via the Internet and challenge other athletes to "virtual" competitions.</p> <p>InterSense July 20, 1998 Press Release.</p> <p>More than any other motion tracker on the market, InterTrax offers high performance and ease of use, there is no source to set up and no configuration software required. The unit comes with an ergonomic curved adapter plate which attaches with Velcro onto the back of any head-mounted display. InterTrax plugs directly into a PC serial port without a separate electronics processing box, and has a single button conveniently accessible on the back for resetting the orientation at the start of a session. The tracker can be used in mouse emulation mode for instant compatibility with many 3D applications, or, for improved performance, can be used in native mode via a simplified protocol allowing for rapid integration by software developers.</p> <p>InterSense July 20, 1998 Press Release.</p>

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CLAIM 50	InterTrax and InterTrax 2
	<p>Currently available for shipping, InterTrax requires a single standard RS-232 connection and can be used across virtually all host platforms, including DOS, Windows 95/NT, Windows 98/NT, MAC, Sun, UNIX, and SGI. The tracker will work in mouse emulation mode with any type of serial mouse, including Logitech and Microsoft. Additionally, mouse emulation can be used without additional software under DOS and Windows. The InterTrax 20 is available for \$795 and the InterTrax 30 is available for \$995. For more information, customers can call InterSense at 1-888-359-8478. About InterSense InterSense's motion-tracking technology measures the 3D motion of a person's head, hands, and body while allowing unconstricted movement through a virtual world. Using inertial and ultrasonic tracking, InterSense's trackers relieve the lag and jitter normally associated with virtual environments. These changes aren't cosmetic, they are</p> <p>InterSense July 20, 1998 Press Release.</p> <p>Sony and InterSense Join Forces to Supply Tracked Personal Display Systems to the Real-Time 3D Computing Market</p> <p>Burlington, Mass. - July 13, 1999 - Sony Broadcast & Professional Europe has joined forces with InterSense Inc., the leading provider of precision motion tracking systems, to provide professional users of 3D graphics with the first affordable, high performance system for exploring and interacting with real-time computer generated environments.</p> <p>InterSense and its international distribution partners will supply the full range of Sony Glasstron LDI series personal display systems bundled with the InterTraxÔ inertial tracking system. The system provides an integrated solution that allows users to view and walk through standard 3D environments in real time. This bundled product offering is compatible with a wide range of 3D software toolkits and most 3D PC software. With prices ranging from \$1,750, it is also priced to appeal to a new generation of 3D software users who were previously unable to take advantage of the benefits of visual simulation.</p>

Exhibit A-19

CLAIM 50	InterTrax and InterTrax 2
	<p>InterSense July 13, 1999 Press Release.</p> <p>Launched in July 1998, the InterTrax has already been widely adopted in such diverse application sectors as architecture, education, entertainment, interior design, marketing and research. InterSense sells its products to major corporations and leading research facilities worldwide. Its recently formed InterTrax business unit supplies affordable headsets and tracking systems to professional, entertainment, engineering and industrial markets through an international distribution network. With an increasing range of compatible software available, traditional users of CAD products can easily transition to real time visualization.</p> <p>InterSense July 13, 1999 Press Release.</p> <p><i>See</i> Disclosures with respect to Claim 1, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>

HH. INDEPENDENT CLAIM 54

CLAIM 54	InterTrax and InterTrax 2
[54.pre] A tracking system comprising	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, a tracking system. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See, e.g.:</i></p>

Exhibit A-19


CLAIM 54	InterTrax and InterTrax 2
	<div>  <p>INTERTRAX² <i>Bringing 3-D To Life</i></p> <p>Three young men wearing InterTrax 2 headsets, looking forward. The background is a gradient of blue and orange.</p> </div> <div> <ul style="list-style-type: none"> ■ Next generation of the world's best-selling tracker ■ Increased functionality and accuracy ■ Priced for consumers, performance for professionals ■ Available standalone or bundled with headsets ■ Simple connection to all personal display devices ■ Available with USB or Serial Interface ■ Compatible with Playstation2, PCs and workstations ■ USB middleware and SDK available <p><i>The Smallest High Performance</i></p>  <p><i>Head Tracker in the World</i></p> <p>INTERSENSE www.isense.com</p> </div> <div>  <p>A person wearing an InterTrax 2 headset and holding a controller, standing in a room with a blue and green background.</p> </div> <p>InterTrax 2 Brochure.</p>

Exhibit A-19

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	<p>InterSense Introduces the InterTrax™ Motion Tracker and Expects to Expand the Use of Virtual Environments</p> <p>The InterTrax motion tracker will bring virtual environments to the professional and high-end consumer marketplace beginning with a virtual fitness trainer</p> <p>Orlando, FL –July 20, 1998 – InterSense (Booth #1317), the leading developer and supplier of motion-tracking systems for human interaction with virtual environments and 3D graphics, today introduced the InterTrax™ 20 and 30 precision motion trackers. Using InterSense's exclusive inertial tracking technology and algorithms, InterTrax relieves the jitter and complex set-up normally associated with virtual environments to create smooth, realistic 3D experiences that can easily be installed on any PC. A low price point and high performance make this tracker suitable for high-end consumers and professionals. Later this summer, InterTrax will be integrated with the Sony GlassTron™ and StairMaster FreeRunner™ to bring virtual environments to consumers in a virtual reality fitness trainer.</p> <p>InterSense July 20, 1998 Press Release.</p>

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[54.a] a sourceless orientation tracker for mounting on a user's head, and	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, a sourceless orientation tracker for mounting on a user's head. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See, e.g.:</i></p>

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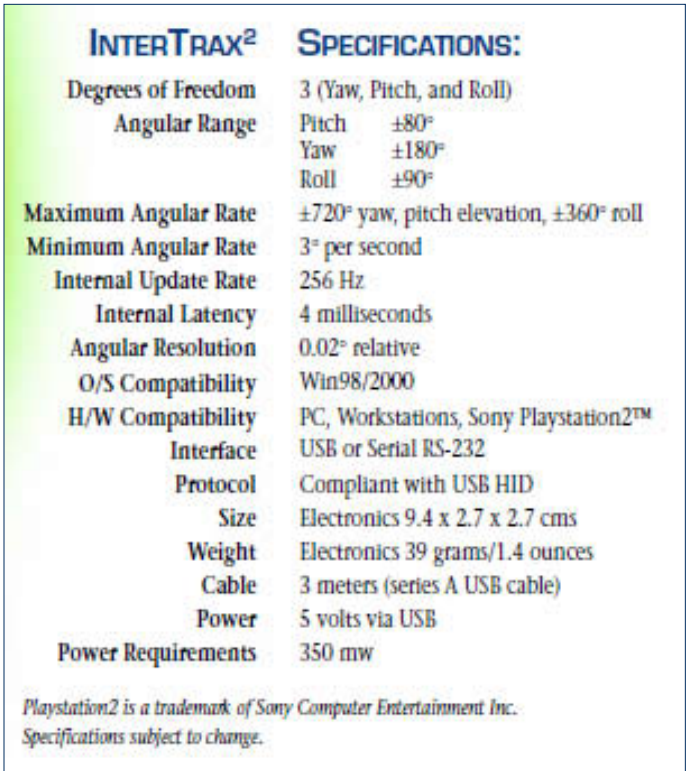
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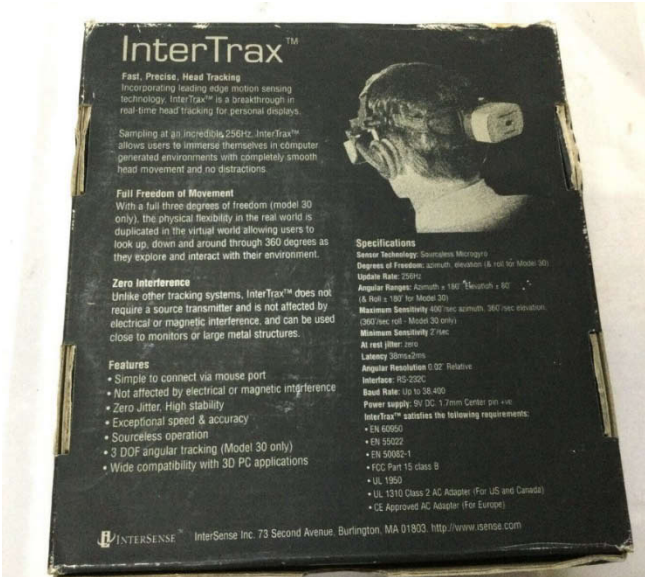
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	<p>InterSense July 13, 1999 Press Release.</p> <p>Launched in July 1998, the InterTrax has already been widely adopted in such diverse application sectors as architecture, education, entertainment, interior design, marketing and research. InterSense sells its products to major corporations and leading research facilities worldwide. Its recently formed InterTrax business unit supplies affordable headsets and tracking systems to professional, entertainment, engineering and industrial markets through an international distribution network. With an increasing range of compatible software available, traditional users of CAD products can easily transition to real time visualization.</p> <p>InterSense July 13, 1999 Press Release.</p>  <p>The image shows the front of the InterTrax product packaging box. The box is dark with white and yellow text. At the top, 'InterTrax™' is written in a large, bold font. Below it, a small image shows a person wearing the headset. The text on the box describes the product's features, including 'Fast, Precise Head Tracking', 'Full Freedom of Movement', 'Zero Interference', and 'Features'. It also lists technical specifications such as 'Sensor Technology: Strainless Microgrids', 'Update Rate: 250Hz', 'Angular Range: Azimuth x 180° Elevation x 90°', 'Maximum Sensitivity: 400 Hz/sec azimuth, 360 Hz/sec elevation', 'Minimum Sensitivity: 2 Hz/sec', 'Latency: 30ms±2ms', 'Angular Resolution: 0.02° Relative', 'Interface: RS-232C', 'Baud Rate: 10 to 58,400', 'Power supply: 9V DC, 1.7mm Center pin +ve', and 'InterTrax™ satisfies the following requirements: CE, EN 60950, EN 50082-1, FCC Part 15 class B, UL 1950, UL 1310 Class 2 AC Adapter (For US and Canada), and CE Approved AC Adapter (For Europe)'. At the bottom, it says 'InterSense Inc. 73 Second Avenue, Burlington, MA 01803. http://www.isense.com'.</p> <p>InterTrax Packaging.</p>

Exhibit A-19


CLAIM 54	InterTrax and InterTrax 2
	 <p>InterTrax Packaging.</p> <p><i>See Defendants' Invalidity Contentions for further discussion.</i></p>
<p>[54.b] a position tracker adapted to track a position of a first localized feature associated with a limb of the user relative to the user's head.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, a position tracker adapted to track a position of a first localized feature associated with a limb of the user relative to the user's head. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See, e.g.:</i></p>

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CLAIM 54	InterTrax and InterTrax 2
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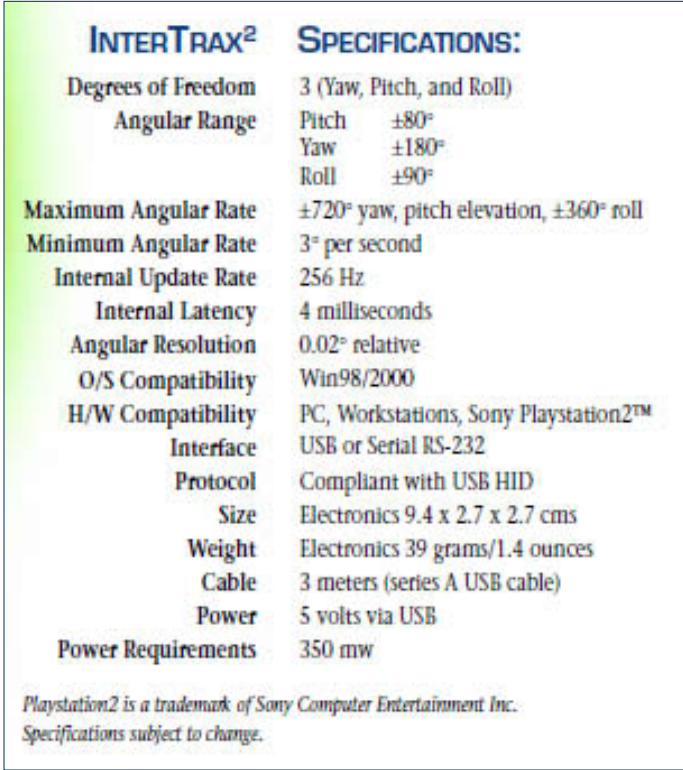
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	<p>InterSense July 13, 1999 Press Release.</p> <p>Launched in July 1998, the InterTrax has already been widely adopted in such diverse application sectors as architecture, education, entertainment, interior design, marketing and research. InterSense sells its products to major corporations and leading research facilities worldwide. Its recently formed InterTrax business unit supplies affordable headsets and tracking systems to professional, entertainment, engineering and industrial markets through an international distribution network. With an increasing range of compatible software available, traditional users of CAD products can easily transition to real time visualization.</p> <p>InterSense July 13, 1999 Press Release.</p> <p>See Defendants' Invalidity Contentions for further discussion.</p>

II. INDEPENDENT CLAIM 56

CLAIM 56	InterTrax and InterTrax 2
[56.pre] A system comprising:	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, a system. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p>See, e.g.:</p>

Exhibit A-19

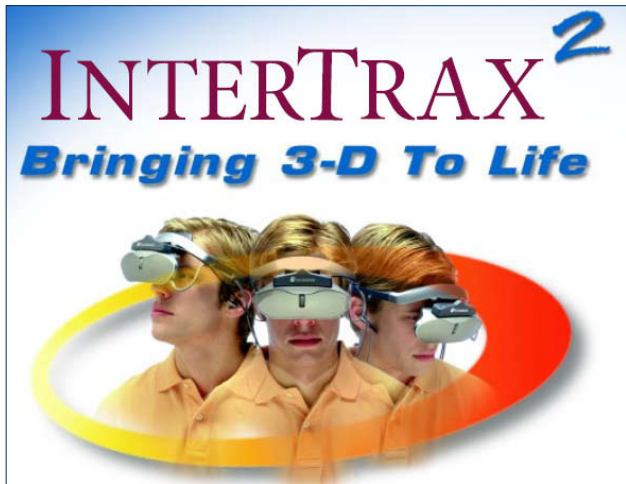

CLAIM 56	InterTrax and InterTrax 2
	<div>  <p>INTERTRAX² <i>Bringing 3-D To Life</i></p> <p>Three young men wearing InterTrax 2 headsets, looking forward. The background is a gradient of blue and orange.</p> </div> <div> <ul style="list-style-type: none"> ■ Next generation of the world's best-selling tracker ■ Increased functionality and accuracy ■ Priced for consumers, performance for professionals ■ Available standalone or bundled with headsets ■ Simple connection to all personal display devices ■ Available with USB or Serial Interface ■ Compatible with Playstation2, PCs and workstations ■ USB middleware and SDK available <p><i>The Smallest High Performance</i></p>  <p><i>Head Tracker in the World</i></p> <p>INTERSENSE www.isense.com</p> </div> <div>  <p>A person wearing an InterTrax 2 headset and holding a controller, standing in a room with a blue and green background.</p> </div> <p>InterTrax 2 Brochure.</p>

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[56.a] mounting a first inertial sensor on a user's head;	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, mounting a first inertial sensor on a user's head. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See, e.g.:</i></p>

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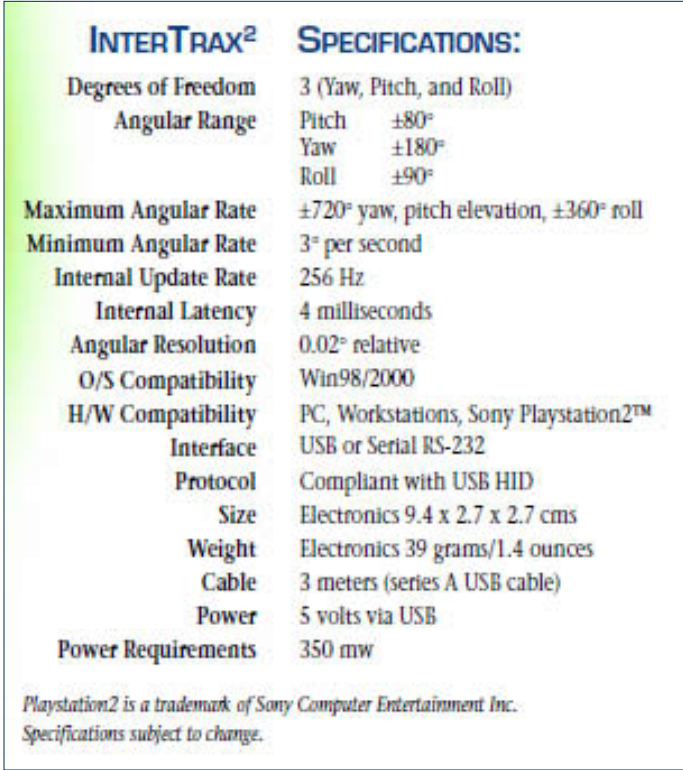
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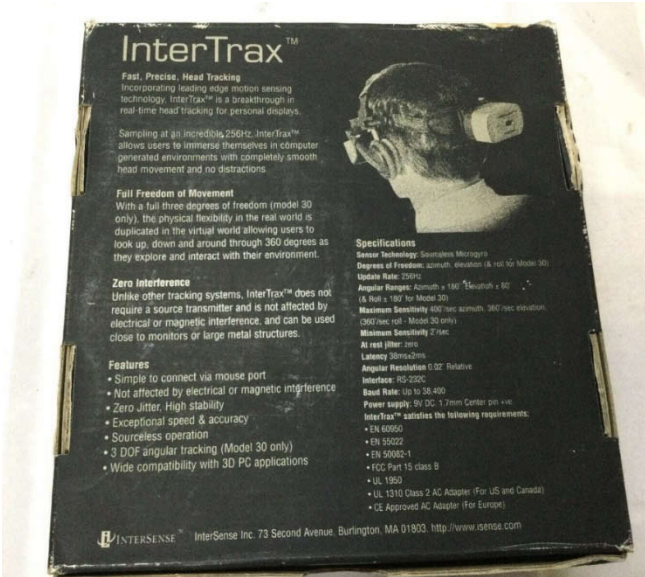
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Exhibit A-19


CLAIM 56	InterTrax and InterTrax 2
	 <p>InterTrax Packaging.</p> <p><i>See Defendants' Invalidity Contentions for further discussion.</i></p>
<p>[56.b] mounting a second inertial sensor elsewhere on the user's body or in an object held by the user; and</p>	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, mounting a second inertial sensor elsewhere on the user's body or in an object held by the user. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See, e.g.:</i></p>

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	<p>InterSense Introduces the InterTrax™ Motion Tracker and Expects to Expand the Use of Virtual Environments</p> <p>The InterTrax motion tracker will bring virtual environments to the professional and high-end consumer marketplace beginning with a virtual fitness trainer</p> <p>Orlando, FL –July 20, 1998 – InterSense (Booth #1317), the leading developer and supplier of motion-tracking systems for human interaction with virtual environments and 3D graphics, today introduced the InterTrax™ 20 and 30 precision motion trackers. Using InterSense's exclusive inertial tracking technology and algorithms, InterTrax relieves the jitter and complex set-up normally associated with virtual environments to create smooth, realistic 3D experiences that can easily be installed on any PC. A low price point and high performance make this tracker suitable for high-end consumers and professionals. Later this summer, InterTrax will be integrated with the Sony GlassTron™ and StairMaster FreeRunner™ to bring virtual environments to consumers in a virtual reality fitness trainer.</p> <p>InterSense July 20, 1998 Press Release.</p> <p>"InterSense has been recognized in the industry as the leading developer and manufacturer of motion-tracking technologies," said Charlie Miller, InterSense CEO. "With our flagship inertial and ultrasonic trackers, the IS-300 and IS-600, we were able to make virtual environments viable business solutions. Now, with our new line of motion trackers, the InterTrax 20 and 30, both at a lower price point, we can make the benefits of our sourceless inertial tracking technology available to an even broader professional and consumer market. With InterTrax, there is no disorienting slosh and jitter because it is based on InterSense's patented drift-corrected gyroscopic technology. With InterTrax, our goal at InterSense is to make virtual environments part of everyday life."</p> <p>InterSense July 20, 1998 Press Release.</p> <p>InterSense will take the first step in bringing virtual environments to the professional and consumer marketplace when InterTrax is incorporated with Sony's</p>

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[56.c] tracking the position of one inertial sensor relative to the other.	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, tracking the position of one inertial sensor relative to the other. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p>See, e.g.:</p>

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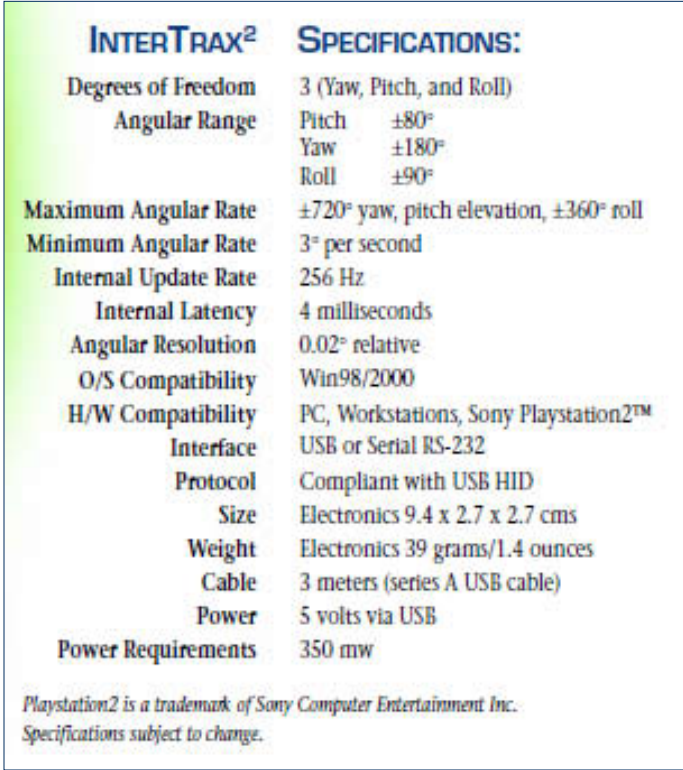
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JJ. DEPENDENT CLAIM 57

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<p>[57] The method of claim 56, further comprising:</p> <p>sensing data at the first and second inertial sensors and using the sensed data to track the position of one inertial sensor relative to the other.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, the method of claim 56, further comprising sensing data at the first and second inertial sensors and using the sensed data to track the position of one inertial sensor relative to the other. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p>See, e.g.:</p>

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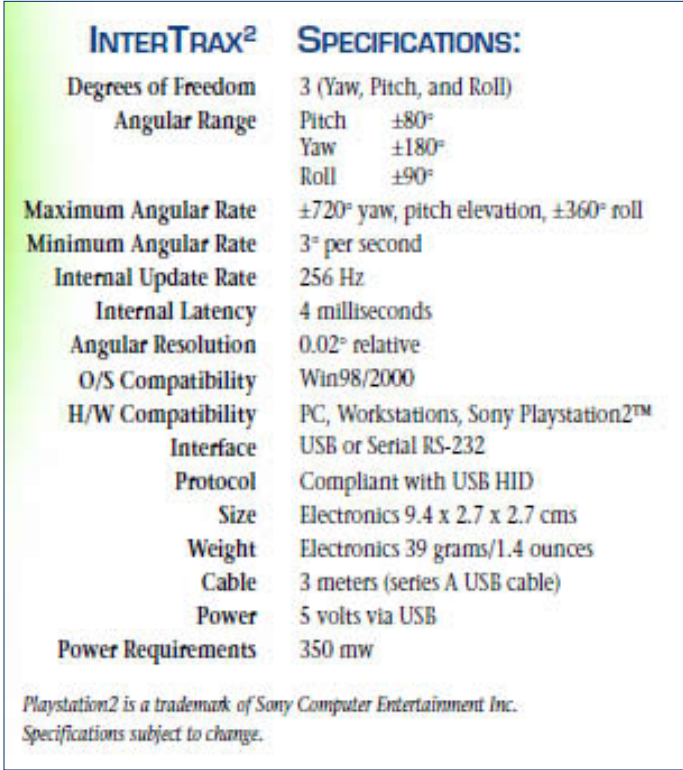
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	<p>GlassTron™ personal display and into StairMaster's FreeRunner™ to create the first widely deployed virtual environment physical fitness training system. Exercisers will be able to work out in complete freedom while enjoying a computer-generated environments for fun, fitness, or competition. Lunar landscapes and more earthly environments, such as the Boston Marathon, have already been created. Eventually, fitness centers will be able to network multiple machines in the same club or across the country via the Internet and challenge other athletes to "virtual" competitions.</p> <p>InterSense July 20, 1998 Press Release.</p> <p>More than any other motion tracker on the market, InterTrax offers high performance and ease of use, there is no source to set up and no configuration software required. The unit comes with an ergonomic curved adapter plate which attaches with Velcro onto the back of any head-mounted display. InterTrax plugs directly into a PC serial port without a separate electronics processing box, and has a single button conveniently accessible on the back for resetting the orientation at the start of a session. The tracker can be used in mouse emulation mode for instant compatibility with many 3D applications, or, for improved performance, can be used in native mode via a simplified protocol allowing for rapid integration by software developers.</p> <p>InterSense July 20, 1998 Press Release.</p>

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	<p>Currently available for shipping, InterTrax requires a single standard RS-232 connection and can be used across virtually all host platforms, including DOS, Windows 95/NT, Windows 98/NT, MAC, Sun, UNIX, and SGI. The tracker will work in mouse emulation mode with any type of serial mouse, including Logitech and Microsoft. Additionally, mouse emulation can be used without additional software under DOS and Windows. The InterTrax 20 is available for \$795 and the InterTrax 30 is available for \$995. For more information, customers can call InterSense at 1-888-359-8478. About InterSense InterSense's motion-tracking technology measures the 3D motion of a person's head, hands, and body while allowing unconstricted movement through a virtual world. Using inertial and ultrasonic tracking, InterSense's trackers relieve the lag and jitter normally associated with virtual environments. These changes aren't cosmetic, they are</p> <p>InterSense July 20, 1998 Press Release.</p> <p>Sony and InterSense Join Forces to Supply Tracked Personal Display Systems to the Real-Time 3D Computing Market</p> <p>Burlington, Mass. - July 13, 1999 - Sony Broadcast & Professional Europe has joined forces with InterSense Inc., the leading provider of precision motion tracking systems, to provide professional users of 3D graphics with the first affordable, high performance system for exploring and interacting with real-time computer generated environments.</p> <p>InterSense and its international distribution partners will supply the full range of Sony Glasstron LDI series personal display systems bundled with the InterTraxÔ inertial tracking system. The system provides an integrated solution that allows users to view and walk through standard 3D environments in real time. This bundled product offering is compatible with a wide range of 3D software toolkits and most 3D PC software. With prices ranging from \$1,750, it is also priced to appeal to a new generation of 3D software users who were previously unable to take advantage of the benefits of visual simulation.</p>

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	<p>InterSense July 13, 1999 Press Release.</p> <p>Launched in July 1998, the InterTrax has already been widely adopted in such diverse application sectors as architecture, education, entertainment, interior design, marketing and research. InterSense sells its products to major corporations and leading research facilities worldwide. Its recently formed InterTrax business unit supplies affordable headsets and tracking systems to professional, entertainment, engineering and industrial markets through an international distribution network. With an increasing range of compatible software available, traditional users of CAD products can easily transition to real time visualization.</p> <p>InterSense July 13, 1999 Press Release.</p> <p>See Disclosures with respect to Claim 56, <i>supra</i>; see also Defendants' Invalidity Contentions for further discussion.</p>

KK. DEPENDENT CLAIM 58

CLAIM 58	InterTrax and InterTrax 2
<p>[58] The method of claim 57, wherein tracking the position of the inertial sensor is done without reference to any signal received from a source not mounted on or held by the user.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, the method of claim 57, wherein tracking the position of the inertial sensor is done without reference to any signal received from a source not mounted on or held by the user. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p>See, e.g.:</p>

Exhibit A-19

CLAIM 58	InterTrax and InterTrax 2
	<div>  <p>INTERTRAX² <i>Bringing 3-D To Life</i></p> </div> <div> <ul style="list-style-type: none"> ■ Next generation of the world's best-selling tracker ■ Increased functionality and accuracy ■ Priced for consumers, performance for professionals ■ Available standalone or bundled with headsets ■ Simple connection to all personal display devices ■ Available with USB or Serial Interface ■ Compatible with Playstation2, PCs and workstations ■ USB middleware and SDK available <p><i>The Smallest High Performance</i></p>  <p><i>Head Tracker in the World</i></p> <p>INTERSENSE www.isense.com</p> </div> <p>InterTrax 2 Brochure.</p> <div>  </div> <div>  <p><i>INTERTRAX² is available standalone or bundled with headsets</i></p> <p>INTERTRAX²</p> </div>

Exhibit A-19

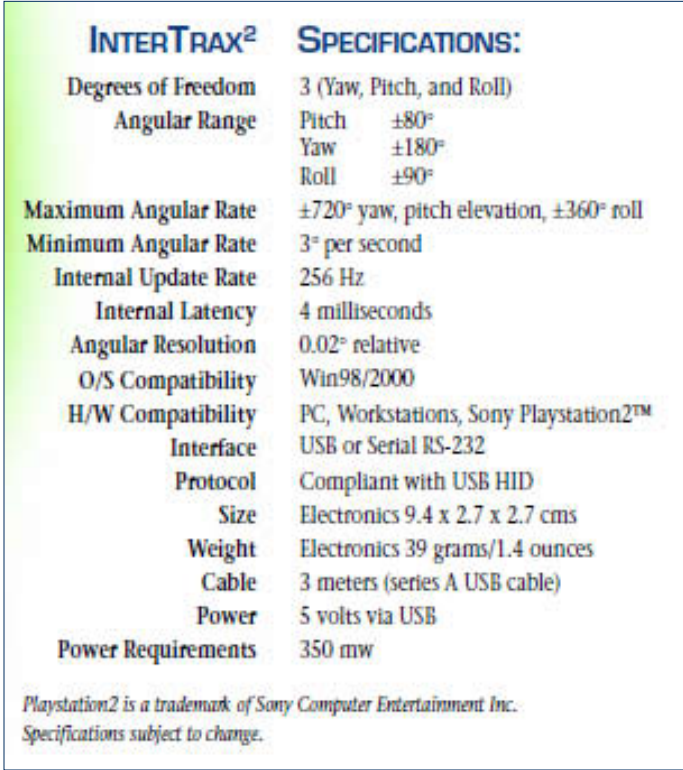
CLAIM 58	InterTrax and InterTrax 2																																
	<p>InterTrax 2 Brochure.</p> <div>  <p>INTERTRAX² SPECIFICATIONS:</p> <table> <tr> <td>Degrees of Freedom</td><td>3 (Yaw, Pitch, and Roll)</td></tr> <tr> <td>Angular Range</td><td>Pitch ±80° Yaw ±180° Roll ±90°</td></tr> <tr> <td>Maximum Angular Rate</td><td>±720° yaw, pitch elevation, ±360° roll</td></tr> <tr> <td>Minimum Angular Rate</td><td>3° per second</td></tr> <tr> <td>Internal Update Rate</td><td>256 Hz</td></tr> <tr> <td>Internal Latency</td><td>4 milliseconds</td></tr> <tr> <td>Angular Resolution</td><td>0.02° relative</td></tr> <tr> <td>O/S Compatibility</td><td>Win98/2000</td></tr> <tr> <td>H/W Compatibility</td><td>PC, Workstations, Sony Playstation2™</td></tr> <tr> <td>Interface</td><td>USB or Serial RS-232</td></tr> <tr> <td>Protocol</td><td>Compliant with USB HID</td></tr> <tr> <td>Size</td><td>Electronics 9.4 x 2.7 x 2.7 cms</td></tr> <tr> <td>Weight</td><td>Electronics 39 grams/1.4 ounces</td></tr> <tr> <td>Cable</td><td>3 meters (series A USB cable)</td></tr> <tr> <td>Power</td><td>5 volts via USB</td></tr> <tr> <td>Power Requirements</td><td>350 mw</td></tr> </table> <p><i>Playstation2 is a trademark of Sony Computer Entertainment Inc. Specifications subject to change.</i></p> </div> <p>InterTrax 2 Brochure.</p>	Degrees of Freedom	3 (Yaw, Pitch, and Roll)	Angular Range	Pitch ±80° Yaw ±180° Roll ±90°	Maximum Angular Rate	±720° yaw, pitch elevation, ±360° roll	Minimum Angular Rate	3° per second	Internal Update Rate	256 Hz	Internal Latency	4 milliseconds	Angular Resolution	0.02° relative	O/S Compatibility	Win98/2000	H/W Compatibility	PC, Workstations, Sony Playstation2™	Interface	USB or Serial RS-232	Protocol	Compliant with USB HID	Size	Electronics 9.4 x 2.7 x 2.7 cms	Weight	Electronics 39 grams/1.4 ounces	Cable	3 meters (series A USB cable)	Power	5 volts via USB	Power Requirements	350 mw
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Exhibit A-19

CLAIM 58	InterTrax and InterTrax 2
	<p>InterSense Introduces the InterTrax™ Motion Tracker and Expects to Expand the Use of Virtual Environments</p> <p>The InterTrax motion tracker will bring virtual environments to the professional and high-end consumer marketplace beginning with a virtual fitness trainer</p> <p>Orlando, FL –July 20, 1998 – InterSense (Booth #1317), the leading developer and supplier of motion-tracking systems for human interaction with virtual environments and 3D graphics, today introduced the InterTrax™ 20 and 30 precision motion trackers. Using InterSense's exclusive inertial tracking technology and algorithms, InterTrax relieves the jitter and complex set-up normally associated with virtual environments to create smooth, realistic 3D experiences that can easily be installed on any PC. A low price point and high performance make this tracker suitable for high-end consumers and professionals. Later this summer, InterTrax will be integrated with the Sony GlassTron™ and StairMaster FreeRunner™ to bring virtual environments to consumers in a virtual reality fitness trainer.</p> <p>InterSense July 20, 1998 Press Release.</p> <p>"InterSense has been recognized in the industry as the leading developer and manufacturer of motion-tracking technologies," said Charlie Miller, InterSense CEO. "With our flagship inertial and ultrasonic trackers, the IS-300 and IS-600, we were able to make virtual environments viable business solutions. Now, with our new line of motion trackers, the InterTrax 20 and 30, both at a lower price point, we can make the benefits of our sourceless inertial tracking technology available to an even broader professional and consumer market. With InterTrax, there is no disorienting slosh and jitter because it is based on InterSense's patented drift-corrected gyroscopic technology. With InterTrax, our goal at InterSense is to make virtual environments part of everyday life."</p> <p>InterSense July 20, 1998 Press Release.</p> <p>InterSense will take the first step in bringing virtual environments to the professional and consumer marketplace when InterTrax is incorporated with Sony's</p>

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LL. DEPENDENT CLAIM 59

CLAIM 59	InterTrax and InterTrax 2
<p>[59] The method of claim 58, wherein the drift of the relative position or orientation of the second inertial sensor relative to the first inertial sensor is corrected by measurements between devices on the user's head and devices</p>	<p>At least under Plaintiffs' apparent infringement theory, InterTrax and InterTrax 2 discloses, either expressly or inherently, the method of claim 58, wherein the drift of the relative position or orientation of the second inertial sensor relative to the first inertial sensor is corrected by measurements between devices on the user's head and devices elsewhere on the users body. In the alternative, this element would be obvious over InterTrax and InterTrax 2 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p>See, e.g.:</p>

Exhibit A-19

CLAIM 59	InterTrax and InterTrax 2
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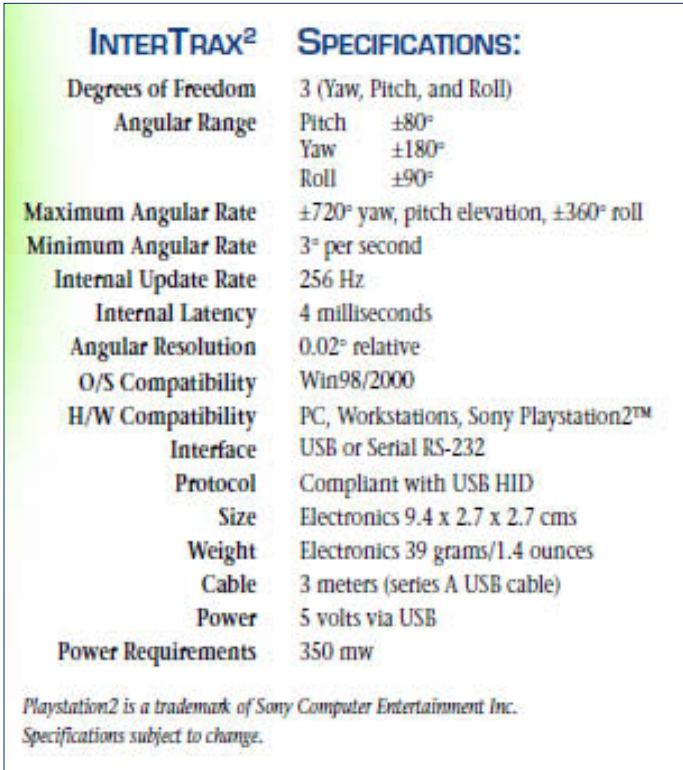
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